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# San Francisco HIV Prevention Plan



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## Dedication

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As the city of San Francisco embarks on a period of transition and change, we, as HPPC, once again commit to fighting the epidemic. We believe that our success is tied to collaborating with and supporting various communities of San Francisco also committed to this fight, including people living with HIV, people at greatest risk for infection, and people supporting these groups. We cannot move forward without acknowledging the thirty years of work that precedes this Plan. Today's HPPC embodies the passion, integrity, and initiative of the men, women, and transgender communities who have and continue to shape San Francisco into a leader of cutting edge HIV prevention and education strategies.

2010

San Francisco HIV Prevention Plan

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2010

San Francisco HIV Prevention Plan  
**Introduction**





# Introduction

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## Background

Nearly thirty years into the U.S. HIV epidemic, San Francisco continues to develop innovative strategies and interventions to prevent and treat HIV. As one of the first and hardest-hit centers of HIV, San Francisco holds a unique place in history, from our community's unprecedented mobilization in the 1980s to address the epidemic, to the development of prevention and care models, to our continued commitment to developing evidence-based, cost-effective, and community-supported prevention interventions. In 2010, there is an ongoing need to emphasize HIV prevention: infection rates among men who have sex with men (MSM), transfemales, and injection drug users (IDUs) remain unacceptably high. While new infections among non-injecting heterosexual men and women and perinatal transmission remain relatively rare, we must continue to be vigilant to ensure no HIV resurgence among these groups. In preparing this Plan, the HIV Prevention Planning Council (HPPC) members exhaustively reviewed local data, heard hours of community testimony, and have brought their own experiences in a concerted effort to determine how best to reduce new HIV infections in San Francisco. This Plan represents this commitment.

Our current community planning process is a concept that came of age here in the early days of the epidemic. San Francisco initiated an effort to ensure that community planning was formalized in federal legislation and administrative guidance. The result was the issuance of the Centers for Disease Control and Prevention's (CDC's) guidance on community planning, which requires health departments to work collaboratively with community planning groups to design local prevention plans that best represent the HIV prevention needs of their respective jurisdictions. Thus, in 1994, the San Francisco HPPC was formed. Since then, the HPPC has been a consistent and clear voice representing the communities affected by HIV.

From the early days of the epidemic, the role of community planning has been multi-faceted. Community planning helped identify the groups at highest risk for HIV infection. It helped empower many populations that previously had limited or no voice in determining the design and delivery of prevention and care services, including gay men and other MSM, transpeople, injection drug users, youth, and immigrants. It created a public forum for anyone to express ideas and concerns surrounding HIV. The principles of parity, inclusion, and representation that guide community planning ensure that all affected communities, including people of various sexual orientations, racial/ethnic backgrounds, incomes, genders, and life experiences have a place at the table. Our community planning process has always been based on the belief that determining the best way to respond to local HIV prevention priorities and needs is through local decision-making.

## What Has Changed Since the Last Prevention Plan

Since the last HIV Prevention Plan was published in 2004, there are reasons for optimism with regard to HIV in San Francisco. The increasing trend seen in new HIV infections at the turn of the millennium appears to have leveled off and may even be on a downward trend; simpler and effective treatment options are now available for persons living with HIV; and AIDS-related deaths continue to decline. There is growing recognition that both prevention and treatment must go hand-in-hand and with further emphasis on integration of HIV prevention with other services needed by high-risk groups. These services include testing and care for other sexually transmitted infections (STIs), substance use treatment, housing, and mental health services. Efforts to develop innovative prevention interventions considered untenable by many just a few years ago are now underway, including those determining whether taking antiretrovirals on a regular basis before exposure to HIV (known as pre-exposure prophylaxis) is an effective prevention strategy. At the federal level, there is also reason for hope. The election of a President committed to health care reform represents the most promising opportunity in many years to revitalize health promotion and prevention efforts nationally. The President has endorsed the development of a national HIV/AIDS strategy that could profoundly affect how HIV prevention efforts are supported.

Nevertheless, optimism must be tempered by less promising developments. With the current economic crisis, HIV prevention programs/activities have experienced substantial budgetary cuts, and compared to 2004, our public health dollars are reduced, challenging us to prioritize

programs and target prevention efforts. Integration of HIV prevention with other services must not result in its being less emphasized. On the research front, multiple potential prevention interventions, including several vaccine candidates and intensive counseling interventions, have shown no efficacy in controlled research studies. While the estimated number of new HIV infections each year has gone from 1,082 in 2000 to 975 in 2006, we are nowhere near eradication of new HIV infections, and HIV prevalence continues to increase. Given our current estimates of risk behavior and HIV infection rates, it is estimated that a 20-year old White gay man in San Francisco has a 60% chance of becoming infected by the age of 60; for an African American 20-year old gay man, the risk is 80%. Such statistics are unacceptable, our society must rally its resources and reinforce its commitment to preventing and treating HIV. In doing so, we must not function in a vacuum. To be successful, HIV prevention must be integrated in the continued struggle to end disparities and achieve equality for all. Such work is particularly pertinent among groups most affected by HIV, including gay men and transpeople.

What is the role of community planning in these challenging times? It remains critically important locally, nationally, and internationally. Within San Francisco, three people per day become infected with HIV; in the U.S., a new HIV infection occurs every 9.5 minutes. With national data showing consistently high rates of new infections in the U.S.—especially among MSM and persons of color—communities must be full partners as we face the challenging task of treating and preventing HIV. In San Francisco, the HPPC plays a key role in illuminating community voices, providing training and support in the articulation of needs, and advocating for the resources necessary to meet those needs with appropriate, effective, and cost-efficient care and resources.

This Plan is the result of the work of the HPPC and its committees from 2004 through 2009. A broad spectrum of San Francisco community members have debated the principles and approaches contained in the Plan. Together the HPPC and SFDPH HIV Prevention Section have established priorities for HIV prevention in San Francisco, and together we recommend strategies and interventions to meet the needs of our communities. We believe and fully support working in partnership with other stakeholders in the community, whether they be federal, state or local governments, elected officials, community members, community-based organizations, schools, private foundations, private or public hospitals, companies, or various other organizations. Together we can develop and implement a shared vision to recommend and provide services as articulated by those at risk for or living with HIV, and their families and friends. We are committed to ending this epidemic, eliminating the health disparities underlying the epidemic, and promoting health and wellness for all.

## San Francisco's Current HIV Epidemic

A cumulative total of 28,114 persons have been diagnosed with AIDS in San Francisco. As of December 31, 2008, a total of 18,866 deaths have occurred among San Francisco residents diagnosed with AIDS. Approximately 15,757 persons are estimated to be living with HIV/AIDS in the city. New HIV infections peaked around 1982, followed by a period of rapid decline that lasted into the early 1990s, when the rate of new infections stabilized at approximately 500 per year. From the mid-1990s to the early 2000s, rates of new infections rose again, to an estimated 1,082 per year by 2000 consensus estimates. The most recent consensus in 2006 estimated 975 new infections annually. A newer method of calculating new infections in San Francisco found there were approximately 792 new infections in 2007, although the range is as low as 552 to as high as 1,033 (SFDPH 2008b). Taking into account the overall estimated trends, the resurgence in infection rates we witnessed at the turn of the millennium appears to have plateaued, and there is some indication that rates have declined somewhat in the last few years. However, this is no cause for complacency: if current behavioral and biologic indicators hold steady, we must now consider HIV to be endemic (persistent and established) in San Francisco, with HIV prevalence increasing every year due to longer survival and a rate of new infection that more than replaces deaths due to AIDS. In our most severely affected populations, such as MSM and transfemales, HIV may be considered "hyper-endemic" with prevalence rates rivaling many other infectious or chronic diseases. While "endemic" and "hyper-endemic" are important epidemiologic terms, historically the phrase "HIV epidemic" has been applied in describing HIV in San Francisco, and we will continue to use this phrase in the Plan to describe patterns of HIV rates in the city.

While HIV and AIDS remain concentrated among gay male communities, which represent approximately 80% of new HIV cases annually, it is important to remember that other groups are also disproportionately affected by HIV. From 2006 estimates, new HIV infection rates appear

to be very high among transfemales, emphasizing the need to support prevention efforts for this highly marginalized population. Thanks to early implementation of syringe access programs, the epidemic among IDUs in San Francisco was largely curtailed, although we still see very high rates of sexual transmission of HIV among MSM who inject drugs (Kral et al 2001). As is the case with MSM infections, IDU infections have stabilized over the past few years, with approximately 114 new infections occurring annually, with just over half among MSM-IDU. New HIV infections remain relatively rare among non-injecting women and among non-injecting men who have sex exclusively with women. Together, it is estimated that these two groups account for less than 0.1% of new infections in San Francisco. Moreover, the vast majority of infections in these populations are indirectly linked to IDU and males who have sex with males and females (MSM/F).

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There are ethnic/racial disparities in HIV in our city. As in the rest of the country, African Americans bear a disproportionate burden of the disease in San Francisco: this is the case for HIV cases among MSM, IDU, and heterosexual women, and may well be the case for transpersons. While it is estimated that 6% of San Francisco's population is African American, 14% of reported HIV cases are among African Americans. Importantly, most African American HIV cases are among MSM, with over 40% of African Americans reported with HIV being MSM. These troubling data reinforce the need to strengthen our HIV prevention efforts among African Americans in coverage, intensity, and appropriateness.

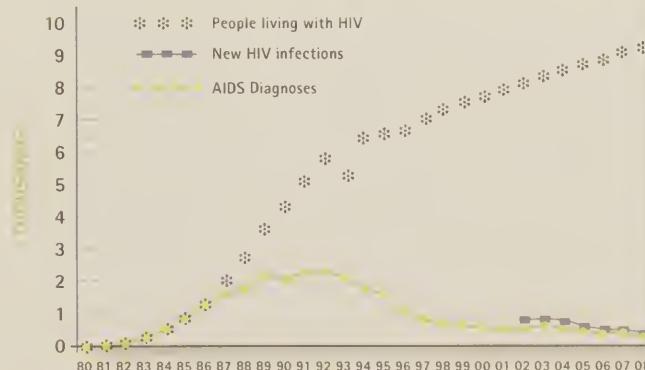
### In summary, the state of HIV in San Francisco 2010 is:

- 1) **Hyper-endemic HIV in MSM populations.**
- 2) **Endemic HIV in IDU populations.**
- 3) **Hyper-endemic HIV in transfemale populations.**
- 4) **Disproportionate burden of HIV in the African American community compared to other races/ethnicities.**
- 5) **Few, sporadic cases in non-IDU heterosexual women and men, and near elimination of perinatal cases, indirectly linked to the above populations.**

These trends must be taken into account in determining how to best deliver HIV prevention services in San Francisco.

#### EXHIBIT

#### Trends in HIV and AIDS, San Francisco, 1980 - 2008\*



Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008 and special data request, November 2009

\* The earliest data available for number of new HIV infections is from 2002 when HIV reporting was first implemented in California.

## San Francisco's Approach to HIV Prevention

The largely endemic state of HIV in San Francisco calls for a renewed commitment to HIV prevention. While our efforts have stemmed the rise in HIV infections, we must now determine how best to drive infections down even further. San Francisco has shown extraordinary leadership in creating cutting-edge, community-focused prevention interventions and services that have been successful locally and adapted throughout the US and internationally. Much is known: HIV remains concentrated in certain populations in San Francisco, specifically among MSM, transfemales, and IDUs. Due to years of high-quality research and evaluation in San Francisco and elsewhere, we know that providing HIV testing and care reduces risk behavior and improves health. We know that syringe access programs work to prevent HIV and other drug-related harm and have been responsible for greatly reducing HIV infection rates among IDUs. We know that specific factors are associated with a risk for HIV, including the use of methamphetamine, having multiple sex partners, or having a sexually transmitted infection (STI). We know that having a lower plasma viral load is associated with a lower risk of HIV transmission, emphasizing the need to reduce viral load not only for the health of the individual living with HIV, but also for prevention purposes.

To fulfill our vision of reducing HIV infections, our approach is based on the following principles:

- 1. Health and wellness for individuals and communities:** Health is "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (WHO Constitution). Health is influenced by multiple factors, including psychological, physical, social, structural, and political. HIV prevention efforts must consider health in this broad context to have a lasting effect on individuals and communities.
- 2. Prevention with both HIV-uninfected and persons living with HIV:** HIV prevention should reach those at risk for HIV, as well as those who are living with the virus. Specific and different messages and interventions may be appropriate for these two groups; on the other hand, common interventions salient to both groups are also important because affected individuals co-exist in common communities.
- 3. Prevention and treatment go hand-in-hand:** A comprehensive prevention approach recognizes that treatment is a vital part of prevention, whether treatment is for substance use, mental health, or HIV. With regard to HIV specifically, a reduction in HIV viral load not only increases lifespan and quality of life, it also reduces infectiousness and the likelihood of HIV transmission.
- 4. End disparities:** We know who is at highest risk for HIV in San Francisco: MSM, transfemales, and IDUs. Our efforts must be prioritized to focus on these populations and communities for us to have the greatest chance of reducing HIV incidence.
- 5. Evaluation is key to the success of prevention:** We must evaluate our programs to know what is working and how to best serve the people we need to reach. Evaluation is critical in determining whether prevention resources are being used most effectively.
- 6. Collaboration between science and community:** The best HIV prevention happens when community input and science work together to create a full picture of what is going on and what needs to happen. The community planning process is one way this occurs. The HPPC is committed to providing leadership to make sure that San Francisco always takes both science and community values into account.

 The World Health Organization's Constitution was adopted by the International Health Conference held in New York from 19 June to 22 July 1946, signed on 22 July 1946 by the representatives of 61 States (Off Rec Wld Hlth Org, 2, 100), and entered into force on 7 April 1948. [http://www.who.int/governance/eb/who\\_constitution\\_en.pdf](http://www.who.int/governance/eb/who_constitution_en.pdf)

Using these principles, we must continue our efforts to eliminate new HIV infections. Of course, we must take into account the many challenges involved in achieving this ultimate goal, including fiscal constraints, and the need to deliver prevention interventions to more high-risk persons. In balancing these challenges with our community experience and evidence-based perspective, the HPPC has set the following specific objectives:

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### **Our overall goal is to reduce new HIV infections by 50% by 2015. Our specific objectives are to:**

- Reduce new HIV infections among MSM by 50%;
- Reduce new HIV infections among transpersons by 50%;
- Eliminate new infections among IDUs; and
- Eliminate perinatal infections.

In reaching the above objectives, we believe we will also achieve the goal of keeping HIV infection rates among non-injecting biological women and men who have sex exclusively with women extremely low, because most transmission within these groups is due to transmission from MSM or IDUs.

### **Our Priority Areas**

It is important to acknowledge that the above goals are similar to those in the 2004 HIV Prevention Plan; to achieve them in the next five years, this Plan expands beyond the HPPCs past priority-setting model and resource-allocation recommendations to focus on five content areas that the HPPC has determined are necessary to meet our objectives for reducing HIV infections. This focus is the result of the recognition that over the past six years both science and community experience have helped us better focus on HIV prevention interventions. After an extensive review of the prevention literature and local data, and input from a variety of community sources, the HPPC has agreed that San Francisco's prevention efforts should emphasize the following five areas:

### **HIV Status Awareness**

HIV status awareness is the umbrella term for any strategy or service that helps people learn their HIV status. Status awareness is highlighted in the Strategies and Interventions Chapter, pp. 170 - 279, and the Evaluation Chapter, pp. 282 - 307.

Status awareness is a cornerstone of our reinvigorated approach to HIV prevention. Recent advances make the status awareness approach more feasible: new testing technologies are being rolled out; expansion of routine HIV testing into medical and other settings is a reality; and more efforts to test social networks of persons at risk for HIV are in progress. Status awareness includes an emphasis on frequent HIV antibody testing among high-risk persons, partner services, and linkages to care. As testing technology has evolved, it has become easier to conduct and obtain HIV testing, especially with the advent of rapid testing. Studies demonstrate that testing positive for HIV results in decreased sexual risk behavior, and with effective treatments for HIV available, it is critical for us to identify persons infected with HIV as soon as possible. Testing for very recent HIV infection before antibodies develop, is also feasible, and in some populations, may efficiently identify persons at extremely high risk for transmitting HIV due to high viral loads and lack of awareness of their status. Partner services and linkages to care remain critically important to meeting the needs of people newly diagnosed and with longstanding HIV infection.

## Prevention with Positives

Prevention with Positives (PWP) is defined as any strategy or intervention that addresses the specific prevention needs of persons living with HIV. PWP is highlighted in the Strategies and Interventions Chapter, pp. 170 – 279.

Persons living with HIV must be actively engaged in HIV prevention efforts: we know that prevention efforts with individuals living with HIV can effectively reduce risk behavior, and provide them with the support they need to live healthy, sex-positive lives. Integrating prevention and treatment efforts by providing people living with HIV with resources and skills to keep themselves and their sexual and syringe-sharing partners healthy, is a critical component of PWP efforts. Persons living with HIV must be involved in the planning and implementation of all PWP programs. In our emphasis on PWP, we include interventions to reduce sexual risk behavior, but also encourage programs to expand to include interventions to link persons with care, help persons living with HIV adhere to medication regimens, and reduce viral load.

## Drivers of HIV in San Francisco

A driver is an underlying condition that is directly linked to a large number of new HIV infections in San Francisco. By definition, drivers affect the populations at highest risk for HIV. Drivers of HIV are highlighted in the Strategies and Interventions Chapter, pp. 170 – 279.

In our endeavors to add a more evidence-based focus to our intervention efforts, a new concept, “drivers,” emerged as central to our new prevention strategy. Drivers are factors that are implicated in a large number of HIV infections in San Francisco, even after taking into account other factors. Focusing evidence-based interventions and resources on drivers is an efficient, prioritized use of resources to reduce HIV infections. In an extensive review of the literature, the HPPC has identified the following drivers: methamphetamine use, cocaine/crack use, poppers use, heavy alcohol use, gonorrhea infection, and having multiple sex partners. As an example of how the driver concept helps focus our efforts, treatment programs would do well to concentrate HIV prevention efforts on high-risk groups that report use of substances that qualify as drivers, rather than addressing all substance users in HIV prevention interventions. Similarly, interventions that address safer sexual behavior should focus on individuals within high-risk groups who have multiple partners. Importantly, as more data emerges about HIV in San Francisco, drivers may change and new ones may emerge—and interventions should be developed and prioritized accordingly.

## Syringe Access and Disposal Programs

Syringe access and disposal programs (syringe access) ensure access to sterile syringes and injection equipment in order to eliminate the transmission of blood-borne viruses among people who inject drugs and their sexual partners. Syringe access programs are highlighted in the Strategies and Interventions Chapter, pp. 170 – 279.

Formerly known as needle exchange, syringe access programs remain critical to our HIV prevention efforts and must be supported. Due to San Francisco's leadership in implementing syringe access programs in the early 1990s, a larger epidemic among IDUs was avoided; in fact, due to the success of our syringe access programs, most HIV transmission among injectors is thought to be sexual (Kral et al 2001). Multiple studies demonstrate the effectiveness of community-based syringe access programs, and the HPPC remains committed to providing this evidence-based, cost-effective practice to prevent HIV infection and other blood-borne pathogens.

## Structural Change

Structural changes are new or modified programs, practices, or policies that are logically linkable to preventing HIV transmission and acquisition and can be sustained over time even when key factors are no longer involved. Structural changes are highlighted in the Strategies and Interventions Chapter, pp. 170 - 279.

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There is growing recognition that for many, individual and group-level interventions are insufficient to reduce HIV risk and improve health over the long term. Structural changes may do so, and are able to effectively reach many more people than interventions tailored for the individual. As we support a prevention model to eliminate new HIV infections, the HPPC offers a renewed emphasis on structural changes as very important to our efforts, especially as a way to effectively and efficiently address the needs of the most underserved populations at risk for HIV. Structural change may include, but are not limited to, HIV prevention efforts. For instance, Healthy San Francisco, the municipal health coverage program for people without private or public insurance, represents a major structural change that provides comprehensive health care for vulnerable populations. Changes in HIV testing laws and policies have resulted in increased HIV testing and detection of infections. The HPPC has recommended that a variety of structural changes be implemented; these appear in the Strategies and Interventions Chapter, pp. 170 - 279.

## Conclusion

This HIV Prevention Plan presents the information needed to implement our vision of what the best prevention efforts should entail. It represents the work of the HPPC since 2006, which approved the Plan in July 2009.

The following chapters tell the story of HIV in San Francisco and what we believe should be done to reduce new infection rates. The Epidemiologic Profile Chapter tells the detailed story of the local HIV epidemic using HIV, AIDS, and other data. The Community Assessment and Priority Setting Chapters follow, describing the priorities for where and how HIV prevention should be focused. The Strategies and Interventions Chapter provides information and resources for designing programs. The Evaluation Chapter provides a roadmap for how we measure what our programs are doing to achieve our objectives.

This HIV prevention Plan is for all of San Francisco. We offer it after many hours of careful, thoughtful, and respectful dialogue with each other, other community members, researchers, and community providers. We hope that it provides what HIV prevention providers need to deliver the best HIV prevention possible, with the goal of ending HIV.



# 1

## Epidemiologic Profile



# Chapter 1

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# Introduction

## PURPOSE OF CHAPTER

The purpose of this chapter is to present the epidemiology of HIV and AIDS in San Francisco. Epidemiologic profiles developed for previous San Francisco HIV Prevention Plans focused specifically on data relevant to prevention planning. This integrated profile, in accordance with guidelines for integrated profiles published by the Centers for Disease Control and Prevention (CDC) and the Health Resources and Services Administration (HRSA), has been expanded to meet the needs of both HIV prevention and HIV healthcare services planning.

## HOW TO READ THIS CHAPTER

This chapter is organized to answer five core epidemiological questions mandated by the federal government and are described below. To understand the disproportionate effects of AIDS on various demographic groups, focus on Section II, p. 23. For information on HIV indicators and recent trends in HIV indicators, read Section III, p. 43. For information on service utilization, focus on Section IV, p. 49.

Those who wish to obtain epidemiologic information about a specific population can use the index at the back of the Plan.

Although the information in this chapter represents the best available, researchers have not thoroughly investigated all aspects of the local HIV epidemic. For example, there is less research available regarding transpersons and HIV in San Francisco compared with MSM. Therefore, some data should be interpreted with caution. Additional data limitations are presented on pp. 13-14.

## DEVELOPMENT OF THE PROFILE – CORE EPIDEMIOLOGIC QUESTIONS

This profile was prepared in accordance with the “Integrated Guidelines for Developing Epidemiologic Profiles” published by the Centers for Disease Control and Prevention (CDC) and the Health Resources and Services Administration (HRSA) in 2004. According to the CDC, an integrated epidemiologic profile for prevention and care should address the following core questions:

1. **What are the demographic characteristics** of the general population in San Francisco? It is important to know the backgrounds of San Francisco residents – their gender, race/ethnicity, age, socioeconomic status, and access to health insurance – in order to understand how HIV and AIDS have impacted various groups.  
*Sources of Data: U.S. Census Data, California Health Interview Survey*
2. **What is the scope of the HIV/AIDS epidemic** in San Francisco? HIV and AIDS cases can be used to illustrate the overall burden of disease in San Francisco, the disproportionate impact of HIV/AIDS on particular populations, and trends in the epidemic. This information is useful for allocation of prevention and health care resources as well as program planning and implementation.  
*Sources of Data: California HIV/AIDS Case Registry, HIV/AIDS surveillance, SFDPH 2006 Consensus Estimates*
3. **What are the indicators of risk for HIV infection** in San Francisco? HIV indicators are diseases or conditions known to follow or precede the pattern of the HIV epidemic. In some cases, indicators can be used to predict trends in HIV infection, and they can also serve as markers of risk behaviors that are known to be associated with HIV infection  
*Sources of Data: SII Surveillance Data, National Health Behavioral Surveillance*
4. **What are the patterns of service utilization of HIV-positive persons** in San Francisco? Understanding who is and is not accessing medical care services, and why, is important for prioritizing services and planning for outreach and recruitment  
*Sources of Data: HIV/AIDS surveillance, RFGHIE System*
5. **What are the number and characteristics of persons who know they are HIV-positive but who are not receiving HIV medical care?** Information about individuals living with HIV and not in care (i.e., people who have not had a medical care appointment for HIV in a 12-month period), including possible reasons why they are not accessing care can assist planners in developing strategies to reduce barriers to medical care.  
*Sources of Data: HIV/AIDS surveillance*

**DISPROPORTIONATELY REPRESENTED** A population group, such as a racial/ethnic group, makes up a higher percentage of people living with HIV or AIDS compared with their percentage in the overall population.

**ENDEMIC** A disease persists in a community, without substantially increasing or decreasing over time.

**EPIDEMIC** The spread of disease is increasing.

**EPIDEMIOLOGY** The scientific study of disease distribution and the factors that cause diseases to spread in communities.

**HIV INCIDENCE** Refers to new HIV infections. Incidence can be expressed as the number of new infections in a year, or as the percentage of uninfected individuals who will become infected in a year.

**HIV INDICATORS** Diseases or conditions known to follow or precede the pattern of the HIV epidemic. Indicators can be used (in some cases) to predict trends in HIV infection, and they can also serve as markers of risk behaviors that are known to be associated with HIV infection.

**HIV PREVALENCE** Refers to people living with HIV, including people living with AIDS, at any given point in time. Prevalence can be expressed as the number of people living with HIV, but is more often expressed as the percentage of people who are living with HIV within a given population.

**UNDER-REPRESENTED** A population group, such as a racial/ethnic group, that makes up a lower percentage of people living with HIV.

The Epidemiologic Profile draws on multiple sources of information, including U.S. Census data, the AIDS case registry, other secondary data (e.g., on STIs), original research (e.g., behavioral studies), and estimates arrived at by consensus among researchers. The following are descriptions, strengths, and weaknesses of the data sources used in this chapter.

## **American Community Survey**

All census data presented in this chapter are from the 2008 American Community Survey unless otherwise indicated. The American Community Survey (ACS) is part of the U.S. Census Bureau's decennial census program designed to give communities a snapshot of how they are changing. The ACS is a nationwide survey that collects and produces population and housing information every year instead of every ten years. More information about ACS can be found at <http://www.census.gov/acs/www/>.

### **Strengths and Limitations**

The census is the most comprehensive source of information about the U.S. population and its characteristics. However, vulnerable and marginalized populations, such as homeless individuals and people living in poverty, may be undercounted. In addition, transpersons are not counted. The census does not collect information on behavioral risk populations; therefore, we do not know, for example, how many MSM live in San Francisco. Finally, the 2000 census collected racial/ethnic information in a way that allowed individuals to more fully represent their identities than in previous censuses. Therefore, the data can be presented in many ways, not just the way it is presented in this chapter.

## **AIDS Case Registry Data**

An AIDS case registry is kept by each public health jurisdiction and contains basic demographic and mode of transmission information about those diagnosed with AIDS. Data on persons living with AIDS (PLWA) and recent AIDS cases is drawn from this source.

### **Strengths and Limitations**

The AIDS Case Registry is the most complete source of data available regarding PLWA in San Francisco. Nevertheless, some groups may be under-represented in the AIDS case registry, such as Native Americans (e.g., some Native Americans have Spanish surnames and may be mistakenly classified as Latino) and transpersons (some transperson PLWA may be mistakenly classified as male or female, which may be in part due to reluctance to disclose identity for fear of discrimination in receiving treatment). Finally, AIDS case data is not a good indicator for trends in new HIV infections, as PLWA likely acquired HIV 5 to 15 years prior to their AIDS diagnosis. Therefore, HIV trend data, to the extent that it is available, must be taken into consideration as well.

## **HIV Case Names Reporting Registry Data**

In April 2006, name-based HIV case reporting was implemented in the State of California. Data on persons living with HIV (PLWH) and recent HIV cases is available through this source.

### **Strengths and Limitations**

As with the AIDS Case Registry, some groups may be under-represented such as Native Americans and transpersons.

## **Ryan White CARE Act Data Report (CADR)**

The Ryan White CARE Act data provides demographic information and service utilization data on all Ryan White CARE Act clients. The HIV healthcare services reporting system in San Francisco is called the REGGIE System.

### **Strengths and Limitations**

CADR is useful for obtaining aggregate demographic information on the total number of unduplicated clients served by providers in a region. It also provides utilization data on medical and

support services that are both funded and non-funded by the Ryan White CARE Act. Service utilization-based data, while providing in-depth information, is limited because it does not capture information about individuals who do not seek services. Individuals not connected to the service system may be affected even more strongly by HIV/AIDS and other health issues, as they may not have access to health care due to lack of insurance or other factors. Therefore, this data may be biased.

### **Other Secondary Data**

Existing data on STIs and other related information was assembled from various government departments. This data is collected on an ongoing basis and is generally based on information derived from service utilization (e.g., number of individuals diagnosed with STIs). Much of this data appears in Section III in the tables that depict indicators of HIV infection for the various behavior risk populations (BRPs). (HIV indicators are diseases or conditions known to public health officials to follow the pattern of the HIV epidemic.)

### **Strengths and Limitations**

As with any service utilization-based data, one of the limitations is that it does not capture information about individuals who do not seek services. Furthermore, some indicator data is very good for predicting HIV infection (e.g., STIs), but other indicator data is less reliable.

### **Original Research**

HIV prevalence, HIV incidence, behavioral studies, and needs assessments either published in peer-reviewed journals or unpublished, provide information about how HIV and AIDS are affecting various populations in San Francisco.

### **Strengths and Limitations**

These studies provide a great deal of detailed information about HIV and AIDS in specific populations. Each study can be biased due to limitations related to sample size, sampling method, what issues the study examines or does not examine, or other factors. Each study must be assessed for validity on its own. Finally, special research studies are usually limited to one time period so they do not provide information on trends over time. The studies used in this chapter were based on sound science, and their strengths outweigh their limitations.

### **HIV Consensus Estimates**

In 2006, the SFDPH used the consensus process to gather data from researchers, epidemiologists, and HIV/AIDS experts. These experts submitted and discussed findings from all the HIV data sources just described, as well as others. They used the range of findings in these studies to estimate HIV prevalence and incidence in different populations.

### **Strengths and Limitations**

The incidence estimates derived from this process are considered the best available and most comprehensive because they draw on a number of data sources, taking into account their strengths and limitations. These are the estimates upon which San Francisco's priority populations are determined. Despite their strengths, these figures are only estimates. Further, the existing estimates are for 2006, although researchers believe they are valid for 2007, 2008, and 2009. HIV prevalence and incidence estimates will be updated for upcoming years as additional data sources are available. As of this writing, an interim estimate is expected in 2010.

## Core Question 1:

**What are the demographic characteristics of the general population in San Francisco?**

### San Francisco Demographic Highlights

- San Francisco is the fourth largest city in California and the fourteenth largest in the nation, with an estimated population of 808,976 in 2008.
- San Francisco's population is nearly equally divided between males and females.
- Whites and Asians make up the largest racial/ethnic groups in San Francisco. More than half of the city's residents are people of color.
- Over three-quarters of San Francisco residents are above age 25, and over half are between ages 25 and 54. The median age is 40.
- Close to half of the city's population speaks a language other than English at home and over a third of San Francisco residents were born outside of the United States.
- Over 80% of the population has a high school diploma or higher, and half of the city's residents have a Bachelor's degree or higher.
- Approximately 11% of San Francisco residents are below the poverty line. The median annual household income is \$73,798.

1 Wherever possible, demographic data are pulled from the U.S. Census Bureau 2008 American Community Survey. It should be noted that not all demographic data includes all San Francisco residents; therefore, totals in some exhibits may vary. In select cases, data are used from the California Department of Finance and the 2007 California Health Interview Survey. Please see sources cited after each individual data table.

**POPULATION** As shown in Exhibit 1, San Francisco's population has grown steadily since 1980, with the U.S. Census Bureau estimating a population of 808,976 in 2008. The city's population is expected to increase through 2020, as projected by the California Department of Finance.

**EXHIBIT 1 San Francisco Population Estimates and Projections, 1980 - 2020**



Source: \*U.S. Census Bureau Population Estimates; ^California Department of Finance Population Projections

**GENDER** As shown in Exhibit 2, San Francisco's population is nearly equally split between males and females. While the U.S. Census does not capture the number of transpersons living in the city, the size of the trans population in San Francisco is estimated at 2,511, which includes 1,883 transfemales and 628 transmales. This estimate is based on McFarland 2007 for transfemales and a study in the 1990s that found that there is about a 3 to 1 ratio of transfemales to transmales (Clements-Nolle et al 2001). It is important to note that the estimated number of transfemales has fluctuated since the study and it is uncertain whether or not this affects the estimates of the transmale population size.

**EXHIBIT 2 Gender Identification Among San Francisco Population**

GENDER	NUMBER	PERCENT
Male	412,449	51%
Female	396,527	49%
<b>TOTAL</b>	<b>808,976</b>	<b>100%</b>
Transpeople*	2,511*	=0.3%

Source: U.S. Census Bureau, 2008 American Community Survey

\*Trans population is an estimate based on McFarland 2007 and a study conducted in the 1990s that found a 3:1 ratio between transfemales and transmales (Clements-Nolle et al 2001). This estimate is not based on the U.S. Census Bureau.

Exhibit 3 illustrates the racial breakdown of the San Francisco population. The largest racial groups are Whites (45%) and Asians (31%), followed by Latinos (14%) and African Americans (6%). Within the Asian population, the largest ethnic groups are Chinese (64%) and Filipino (14%) (Exhibit 4). Among the Hispanic/Latino population, the largest ethnic groups are Mexican (58%) and Central American populations (24%) (Exhibit 5). Of the 3% of the population that reported two or more races (multiracial), approximately one-third identified as White and Asian, 14% identified as White and African American/Black and 11% identified as White and American Indian/Alaska Native.

## EXHIBIT 3

## Racial Identification Among San Francisco Population

RACE	NUMBER	PERCENT*
White/Caucasian	366,491	45%
Asian**	251,121	31%
Latino/Hispanic**	114,303	14%
African American/Black	48,268	6%
Multiracial	20,825	3%
Native Hawaiian and Other Pacific Islander***	3,665	1%
Native American and Alaskan Native***	1,418	0.2%
Other	2,885	0.4%
<b>TOTAL</b>	<b>808,976</b>	<b>100%</b>

Source: U.S. Census Bureau, 2008 American Community Survey

\*Percent does not total to 100 due to rounding.

\*\*See ethnic breakdown in the following tables.

\*\*\*Data by ethnicity cannot be displayed because the number of sample cases is too small.

## EXHIBIT 4

## Ethnic Identification Among San Francisco's Asian and Pacific Islander Population

ETHNICITY	NUMBER	PERCENT*
Chinese (except Taiwanese)	161,912	64%
Filipino	35,543	14%
Vietnamese	16,825	7%
Japanese	9,386	4%
Other Asian	8,046	3%
Korean	7,597	3%
Asian Indian	6,655	3%
Other Asian, not specified	2,023	1%
Cambodian	961	0.4%
Thai	890	0.4%
Taiwanese	833	0.3%
Pakistani	778	0.3%
Laotian	342	0.1%
Hmong	173	0.1%
Indonesian	132	0.1%
Sri Lankan	81	0%
Malaysian	41	0%
Bangladeshi	0	0%
<b>TOTAL</b>	<b>252,218</b>	<b>100%</b>

Source: U.S. Census Bureau, 2008 American Community Survey

\*Percent does not total to 100 due to rounding.

## Ethnic Identification Among San Francisco's Hispanic/Latino Population

ETHNICITY	NUMBER	PERCENT*
Mexican	65,744	58%
Puerto Rican	4,947	4%
Cuban	1,424	1%
Dominican (Dominican Republic)	203	0.2%
Central American:	27,577	24%
<i>Salvadoran</i>	8,936	32%
<i>Nicaraguan</i>	8,347	30%
<i>Guatemalan</i>	6,892	25%
<i>Honduran</i>	1,587	6%
<i>Costa Rican</i>	1,365	5%
<i>Other Central American</i>	274	1%
<i>Panamanian</i>	176	1%
South American:	7,112	6%
<i>Peruvian</i>	2,561	36%
<i>Colombian</i>	1,577	22%
<i>Chilean</i>	1,194	17%
<i>Venezuelan</i>	698	10%
<i>Argentinean</i>	399	6%
<i>Ecuadorian</i>	392	6%
<i>Other South American</i>	151	2%
<i>Bolivian</i>	140	2%
Other Hispanic or Latino:	7,296	6%
<i>Spanish</i>	3,076	42%
<i>All other Hispanic or Latino</i>	2,712	37%
<i>Spanish</i>	1,414	19%
<i>Spanish American</i>	94	1%
<b>TOTAL</b>	<b>114,303</b>	<b>100%</b>

Source: U.S. Census Bureau, 2008 American Community Survey

\*Percent does not total to 100 due to rounding.

**AGE** Exhibit 6 shows that more than three quarters of San Francisco residents are above age 25 and over half are between the ages of 25 and 54. The median age in San Francisco is 40 years.

**EXHIBIT 6 Age of San Francisco Population**

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AGE RANGE	NUMBER	PERCENT*
0 to 19 years	134,400	17%
20 to 24 years	46,634	6%
25 to 34 years	125,891	16%
35 to 44 years	168,468	21%
45 to 54 years	121,355	15%
55 to 59 years	52,032	6%
60 to 64 years	40,721	5%
65 to 74 years	55,584	7%
75+ years	63,891	8%
<b>TOTAL</b>	<b>808,976</b>	<b>100%</b>

*Source: U.S. Census Bureau, 2008 American Community Survey*

*\*Percent does not total to 100 due to rounding.*

**PRIMARY LANGUAGE** Close to half of the city's population (44%) speaks a language other than English at home (Exhibit 7). About a quarter of the city's residents speak Asian and Pacific Islander languages and 11% speak Spanish.

The most common Asian languages spoken in San Francisco are Cantonese and Tagalog. According to U.S. Census data, of those that speak Asian and Pacific Islander languages at home, over 60% speak English less than "very well" – a number that can be used to estimate the percentage of monolingual speakers. Of those who speak Spanish at home, close to half (47%) speak English less than "very well."

**EXHIBIT 7 Language Spoken at Home for San Francisco Population Over Age 5**

PRIMARY LANGUAGE	NUMBER	PERCENT
English only	427,373	56%
Language other than English	339,411	44%
<i>Asian and Pacific Islander languages</i>	196,734	58%
<i>Spanish</i>	85,626	25%
<i>Other Indo-European languages</i>	51,337	15%
<i>Other languages</i>	5,714	2%
<b>TOTAL</b>	<b>766,784</b>	<b>100%</b>

*Source: U.S. Census Bureau, 2008 American Community Survey*

**Language Needs for City Services**

The City and County of San Francisco provides language services to ensure access to city services and programs for clients with limited English proficiency. In 2008, 8,849 calls were made to the city's language line that provides access to on-demand telephone interpreters. The top five frequent languages requested were Spanish (35%), Cantonese (31%), Mandarin (8%), Vietnamese (8%), and Russian (5%).

**COUNTRY  
OF ORIGIN**

Over a third of San Francisco residents were born in another country. Of those, over 60% were born in an Asian country, nearly 20% were born in a Latin American country (Mexico, South and Central America and Islands of the Caribbean), and 15% were born in a European country (Exhibit 8).

Of the San Francisco residents born in an Asian country, most are from Eastern or South-eastern Asia. Of those born in Latin America, most are from Central American countries. Of those born in an African country, the majority are from Western or Eastern Africa.

**EXHIBIT 8****Place of Birth for San Francisco's Foreign-born Population**

PLACE OF BIRTH	NUMBER	PERCENT
Born in U.S.	525,683	65%
Foreign born	283,293	35%
<i>Asia</i>	174,030	61%
<i>Latin America</i> (Mexico, South and Central America and Islands of the Caribbean)	53,358	19%
<i>Europe</i>	43,295	15%
<i>Canada</i>	5,145	2%
<i>Africa</i>	3,653	1%
<i>Oceania*</i>	3,812	1%
TOTAL	808,976	100%

*Source: U.S. Census Bureau, 2008 American Community Survey*

\*Oceania refers to island groups in the South Pacific that include Polynesia, Micronesia, Melanesia, and Australia.

**LEVEL OF  
EDUCATION**

As shown in Exhibit 9, the majority of San Francisco residents have attained a high school education or higher (84%) and 51% of the population possess a Bachelor's degree or higher.

**EXHIBIT 9****Educational Attainment of San Francisco Population  
Over Age 25**

EDUCATION LEVEL	NUMBER	PERCENT
Less than 9th grade	56,139	9%
9th to 12th grade, no diploma	43,364	7%
High school graduate (includes equivalency)	87,683	14%
Some college, no degree	85,304	14%
Associate's degree	33,859	5%
Bachelor's degree	191,261	30%
Graduate or professional degree	130,332	21%
TOTAL	627,942	100%

*Source: U.S. Census Bureau, 2008 American Community Survey*

## INCOME AND POVERTY STATUS

Exhibit 10 shows the annual household income of San Francisco residents. Approximately 64% of San Francisco households make over \$50,000 a year and nearly half of all households (49%) make over \$75,000 a year. However, about 20% of households make less than \$25,000 per year. The median household income is \$73,798. For a detailed discussion of income and poverty as important cofactors of HIV, see the Community Assessment Chapter, pp. 60-147.

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### EXHIBIT 10

#### Annual Household Income of San Francisco Population

ANNUAL HOUSEHOLD INCOME	NUMBER	PERCENT*
Less than \$10,000	22,633	7%
\$10,000 to \$14,999	18,639	6%
\$15,000 to \$24,999	25,587	8%
\$25,000 to \$34,999	17,362	5%
\$35,000 to \$49,999	33,011	10%
\$50,000 to \$74,999	46,617	14%
\$75,000 to \$99,999	36,762	11%
\$100,000 to \$149,999	49,511	15%
\$150,000 to \$199,999	27,412	9%
\$200,000 or more	45,805	14%
TOTAL	323,339	100%

Source: U.S. Census Bureau, 2008 American Community Survey

\*Percent does not total to 100 due to rounding.

Approximately 17% of San Franciscans – 132,030 people live below the poverty level.

Exhibit 11 illustrates the number of people at different percentages of the federal poverty level.

### EXHIBIT 11

#### Poverty Status of San Francisco Residents

ALL INDIVIDUALS BELOW:	NUMBER	PERCENT*
50% of poverty level	43,876	6%
100% of poverty level	88,154	11%
125% of poverty level	125,135	16%
150% of poverty level	152,301	19%
185% of poverty level	193,309	24%
200% of poverty level	206,190	26%

Source: U.S. Census Bureau, 2008 American Community Survey

\*Percent does not total to 100 due to rounding.

## HEALTH INSURANCE STATUS

Data for this section was obtained from the 2007 California Health Interview Survey (CHIS), the largest state health survey in the U.S. CHIS provides a picture of the health and health care needs of California's diverse population. Administered every two years through a random-dial telephone survey, participants are asked about a wide range of health topics.

As shown in Exhibit 12, 92% of San Franciscans have some type of health insurance. Nearly two-thirds of insured individuals (63%) have employment-based health insurance. The next most common forms of health insurance coverage are Medicare in combination with other health insurance (8%); Medi-Cal (7%); private insurance (6%); Medicare and Medi-Cal together (3%); and Medicare only (2%).

## Healthy San Francisco

- A portion of San Franciscans who are uninsured are accessing medical care services through the local initiative Healthy San Francisco. Healthy San Francisco enables residents to access affordable medical care and preventive care through a network of SFPDH clinics, community-based clinics, and private providers.
- Through Healthy San Francisco (HSF), participants are assigned a Medical Home and a primary physician. Participants also have access to specialty care, urgent and emergency care, laboratory, inpatient hospitalization, radiology, and pharmacy services.
- As of October 2008, more than 32,000 uninsured residents have enrolled in the program. More information about HSF is available online (<http://healthysanfrancisco.org/>).

EXHIBIT 12 Type of Health Insurance Coverage

INSURANCE COVERAGE	NUMBER	PERCENT
Uninsured	63,000	8%
Insured	726,000	92%
<i>Employment-based</i>	493,000	63%
<i>Medicare &amp; Others</i>	61,000	8%
<i>Medi-Cal</i>	58,000	7%
<i>Privately purchased</i>	46,000	6%
<i>Medicare &amp; Medi-Cal</i>	27,000	3%
<i>Medicare only</i>	17,000	2%
<i>Healthy Families/CHIP**</i>	14,000	2%
<i>Other public*</i>	11,000	1%
<b>TOTAL</b>	<b>789,000</b>	<b>100%</b>

Source: 2007 California Health Interview Survey

\*Statistically unstable data.

## Core Question 2:

## What is the scope of the HIV/AIDS epidemic in San Francisco?

HIV and AIDS in San Francisco:<sup>\*</sup> An Overview

- San Francisco has had 28,114 people diagnosed with AIDS since the beginning of the epidemic to December 31, 2008, the third largest number after New York City and Los Angeles.
- As of December 2008, 15,757 individuals were living with HIV/AIDS in San Francisco, 9,248 of which were living AIDS cases, and 6,509 of which were living HIV non-AIDS cases.
- In California, San Francisco County ranks second to Los Angeles County in the number of people living with AIDS (PLWA) with 14% of California residents living with AIDS residing in San Francisco (Exhibit 18).
- Living HIV/AIDS cases are primarily concentrated in the Castro, Tenderloin, Western Addition, and Mission neighborhoods of San Francisco.
- The highest proportion of people living with HIV/AIDS (PLWHA) in San Francisco is male, White, between the ages of 40-59, and MSM (including MSM-IDU).
- Compared with their numbers in the general population, African Americans and Whites are disproportionately affected by HIV/AIDS. African Americans make up 6% of San Francisco's population, but represent 14% of both people living with HIV (PLWH) and PLWA with over 40% being MSM. Whites make up 45% of the city's population but represent 63% of PLWH and 65% of PLWA.
- Since the beginning of the epidemic, a total of 18,866 deaths occurred among all persons diagnosed with AIDS in San Francisco. In 2008, a total of 160 deaths occurred among people with AIDS.
- In 2008, a total of 7,046 unduplicated clients reported accessing a number of HIV services including client advocacy services (n=3,587, 51%), case management (n=2,792, 40%), and medical services (n=2,700, 38%).
- Between 2005 and 2007, a total of 1,884 individuals were newly diagnosed with HIV at SFPDH-supported testing sites. Among these, it is estimated that 84% confirmed entry into medical care and received a CD4 count within 12 months of diagnosis.

<sup>\*</sup>Terms and acronyms are used according to data sources.

## Cumulative AIDS Cases Nationally and Locally

In California, San Francisco County ranks second to Los Angeles County in the number of PLWA (Exhibit 13) and among California counties, San Francisco has had the highest number of people diagnosed with AIDS per 100,000 population since the epidemic began. Nationally, San Francisco ranks third in the cumulative number of AIDS cases among metropolitan areas.

## EXHIBIT 13

### California Counties with the Highest Number of Cumulative AIDS Cases, 1983-2008

COUNTY	TOTAL AIDS CASES REPORTED	PERCENT OF ALL CASES IN CALIFORNIA
Los Angeles†	54,805	36%
San Francisco*	28,114	18%
San Diego†	13,813	9%
Orange	7,404	5%
Alameda	7,573	5%
Riverside	5,608	4%
Santa Clara	4,073	3%
San Bernardino	3,799	2%
Sacramento	3,704	2%
Kern	1,234	1%
<b>SUBTOTAL</b>	<b>130,127</b>	<b>85%</b>
<b>TOTAL CALIFORNIA</b>	<b>152,318</b>	<b>-</b>

Source: California Department of Public Health, Office of AIDS, HIV/AIDS Case Registry Section, data as of December 31, 2008, and San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008

†Indicates an Eligible Metropolitan Area (EMA). An EMA is an area identified by the U.S. Department of Health and Human Services to have been severely affected by HIV/AIDS. EMAs must have reported more than 2,000 AIDS cases in the most recent 5 years and have a population of at least 50,000.

\*This number is for San Francisco County only and is not the total for the San Francisco Eligible Metropolitan Area which includes San Mateo and Marin counties.

## Cumulative AIDS Cases by Gender, Race/Ethnicity, and Mode of Transmission

The following section presents information on the cumulative number of HIV/AIDS cases by gender, race/ethnicity, age, and by mode of transmission. As of December 31, 2008, a cumulative total of 28,114 San Francisco residents were diagnosed with AIDS since the beginning of the epidemic. Men represent 94% of all reported AIDS cases since the epidemic began and women represent 4% of all AIDS cases in San Francisco. Transpersons make up 1% of all AIDS cases (Exhibit 14).

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EXHIBIT 14

### Cumulative AIDS Cases by Gender\*

REPORTED AIDS CASES (1980-2008)		
Male	26,563	94%
Female	1,160	4%
Transfemales	386	1%
Transmales	<5	<1%
<b>TOTAL</b>	<b>28,114</b>	<b>100%</b>

*Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Section, special data request, 2008*

*\*Data are reported through March 1, 2009 for cases diagnosed through December 2008.*

Whites make up the majority of all reported AIDS cases through December 2008. African Americans represent 13% of AIDS cases followed by Latinos/Hispanics with 12% of AIDS cases (Exhibit 15). The highest percentage of AIDS cases reported through December 2008 is among 30-39 year olds (45%) followed by 40-49 year olds (32%) (Exhibit 16).

EXHIBIT 15

### Cumulative AIDS Cases by Race/Ethnicity\*

REPORTED AIDS CASES (1980-2008)		
White/Caucasian	20,090	71%
African American/Black	3,610	13%
Latino/Hispanic	3,305	12%
Asian and Pacific Islander	918	3%
Native American/Alaskan Native	149	1%
Multiracial/Other/Unknown	42	<1%
<b>TOTAL</b>	<b>28,114</b>	<b>100%</b>

*Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008 and San Francisco Department of Public Health, HIV/AIDS Epidemiology Section, special data request, 2008*

*\*Data are reported through March 1, 2009 for cases diagnosed through December 2008.*

REPORTED AIDS CASES (1980-2008)			
0-19	75	<1%	
20-24	574	2%	
25-29	2,649	9%	
30-39	12,511	45%	
40-49	8,875	32%	
50-59	2,712	10%	
60+	718	3%	
<b>TOTAL</b>	<b>28,114</b>	<b>100%</b>	

*Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Section, special data request, 2008*

*\*Data are reported through March 1, 2009 for cases diagnosed through December 2008.*

*\*\*Percents do not total to 100 due to rounding.*

Mode of transmission for cumulative AIDS cases in San Francisco differs by race/ethnicity and gender. Among men, the most common mode of transmission for all AIDS cases through December 2008 is MSM within all race/ethnicity groups. MSM-IDU accounts for the second most frequent mode of transmission for all race/ethnicity groups except African Americans. Among African Americans diagnosed with AIDS, injection drug use among non-MSM (including lesbians or women who have sex with women) is the second leading mode of transmission (Exhibit 17).

IDU accounts for the majority of female AIDS cases for all race/ethnic groups except Asian and Pacific Islanders. The most frequent mode of transmission for Asian and Pacific Islanders is heterosexual contact followed by IDU (Exhibit 17).

As with female AIDS cases, IDU was also a frequent mode of transmission among trans-female AIDS cases, particularly for Whites (56%), African Americans (69%), and Latinos (44%).

EXHIBIT 17 Cumulative AIDS Cases by Gender, Mode of Transmission, and Race/Ethnicity, 1980–2008

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	WHITE	AFRICAN AMERICAN	LATINO		ASIAN AND PACIFIC ISLANDER		NATIVE AMERICAN	
MSM	16,039	82 %	1,538	52%	2,375	78%	680	84%
IDU (Non-MSM)	515	3 %	687	23%	167	6%	25	3%
MSM-IDU	2,893	15 %	594	20%	382	13%	61	7%
Heterosexual	32	<1%	54	2%	31	1%	11	1%
Transfusion/ Hemophilia	50	<1%	17	1%	22	1%	14	2%
Other/Unidentified	67	<1%	57	2%	58	2%	23	3%
<b>SUBTOTAL</b>	<b>19,596</b>		<b>2,947</b>		<b>3,035</b>		<b>814</b>	
IDU	252	66%	379	71%	72	46%	21	30%
Heterosexual	84	22%	120	22%	61	39%	31	45%
Transfusion/ Hemophilia	29	8%	13	2%	10	6%	11	16%
Other/Unidentified	18	5%	25	5%	12	8%	6	9%
<b>SUBTOTAL</b>	<b>383</b>		<b>537</b>		<b>155</b>		<b>69</b>	
IDU	62	56%	87	69%	50	44%	11	39%
Non-IDU	48	44%	39	31%	64	56%	24	61%
<b>SUBTOTAL</b>	<b>110</b>		<b>126</b>		<b>114</b>		<b>35</b>	

Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008

# Data not released due to small population size.

PEOPLE LIVING  
WITH HIV/AIDS

**HIV Prevalence, 2008: 6,509**

**AIDS Prevalence, 2008: 9,248**

As of December 2008, 15,757 individuals were living with HIV/AIDS in San Francisco, 9,248 of which were living with AIDS, and 6,509 of which were living with HIV non-AIDS. This includes both code-based and name-based HIV cases. The total number of PLWHA increased from 13,649 in 2002, a possible indicator that persons with HIV/AIDS may be living longer due to antiretroviral treatments.

## People Living With AIDS in California and Citywide

As shown in Exhibit 18, San Francisco County ranks second to Los Angeles County in the number of people living with AIDS (PLWA), with 14% of California residents living with AIDS residing in San Francisco. Nearly half of PLWA in the nine Bay Area counties live in San Francisco, and almost a third (27%) of all PLWA in California live in the Bay Area (Exhibit 19).

## EXHIBIT 18 California Counties with the Highest Number of PLWA, 2008

COUNTY	NUMBER OF PERSONS LIVING WITH AIDS	PERCENT OF ALL CASES IN CALIFORNIA
Los Angeles†	23,729	36%
San Francisco*	9,248	14%
San Diego†	6,678	10%
Orange	3,812	6%
Alameda	3,418	5%
Riverside	3,185	5%
Santa Clara	1,966	3%
San Bernardino	1,759	3%
Sacramento	1,685	3%
Kern	1,234	2%
<b>SUBTOTAL</b>	<b>56,714</b>	<b>85%</b>
<b>TOTAL CALIFORNIA</b>	<b>66,360</b>	<b>-</b>

Source: California Department of Public Health, Office of AIDS, HIV/AIDS Case Registry Section, data as of December 31, 2008 and San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008

†Indicates an Eligible Metropolitan Area (EMA). An EMA is an area identified by the U.S. Department of Health and Human Services to have been severely affected by HIV/AIDS. EMAs must have reported more than 2,000 AIDS cases in the most recent 5 years and have a population of at least 50,000.

\*This number is for San Francisco County only and is not the total for the San Francisco Eligible Metropolitan Area which includes San Mateo and Marin counties.

## EXHIBIT 19 PLWA in the San Francisco Bay Area, 2008

COUNTY	NUMBER OF PERSONS LIVING WITH AIDS	PERCENT OF ALL CASES IN BAY AREA
San Francisco**	9,248	48%
Alameda	3,418	18%
Santa Clara	1,966	10%
Contra Costa	1,095	6%
San Mateo	887	5%
Marin	662	3%
Sonoma	877	5%
Solano	823	4%
Napa	96	<1%
<b>TOTAL SAN FRANCISCO BAY AREA</b>	<b>19,072</b>	<b>27%*</b>
<b>TOTAL CALIFORNIA</b>	<b>66,360</b>	<b>100%</b>

Source: California Department of Public Health, Office of AIDS, HIV/AIDS Case Registry Section, data as of December 31, 2008

\*This is the percent of all California AIDS cases that are among people living in the Bay Area.

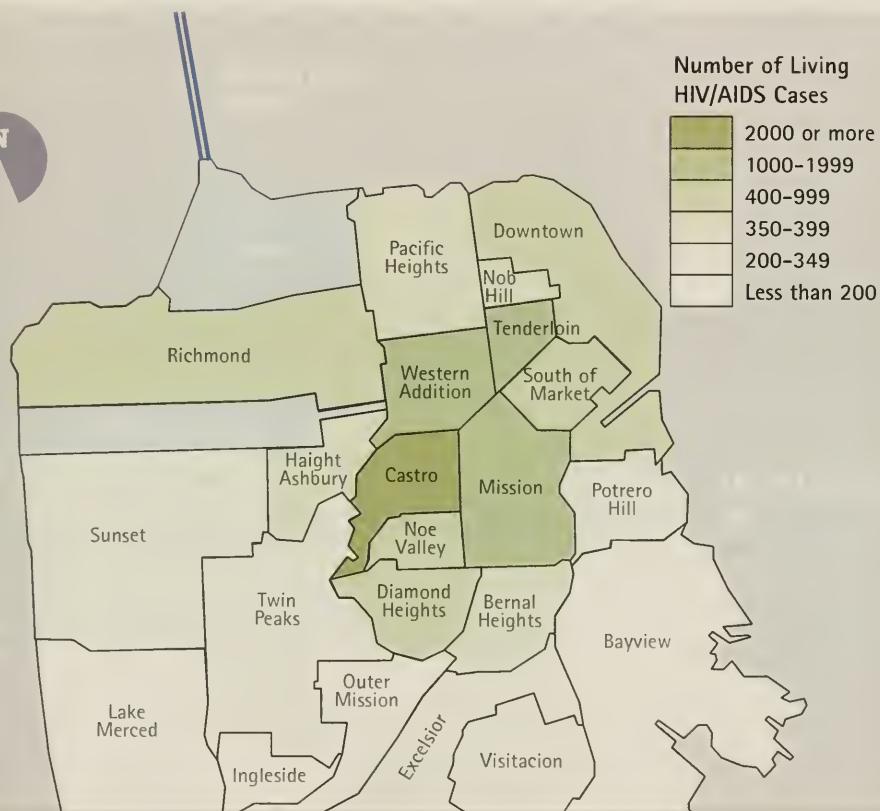
\*\*This number is for San Francisco County only and is not the total for the San Francisco Eligible Metropolitan Area which includes San Mateo and Marin counties.

## Geographic Distribution of HIV/AIDS

Exhibit 20 illustrates the geographic distribution of persons living with HIV/AIDS in San Francisco by neighborhood. People living with HIV/AIDS are primarily concentrated in the Castro, Mission, Western Addition, and Tenderloin.

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EXHIBIT 20 People Living with HIV/AIDS by San Francisco Neighborhood, 2008\*



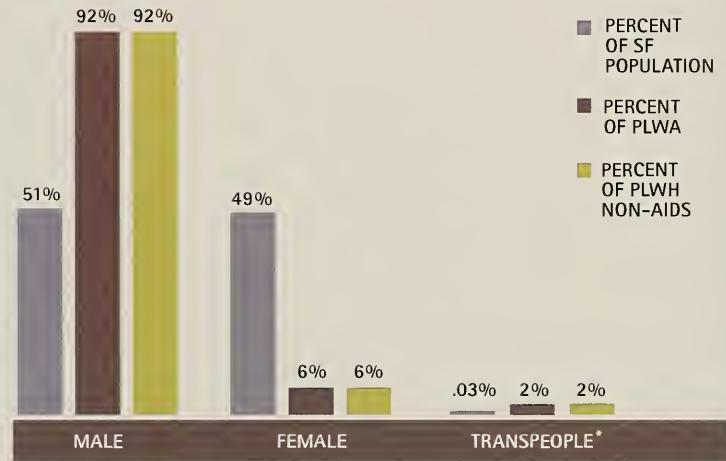
Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008

\*Data includes persons who were San Francisco residents at the time of their HIV/AIDS diagnosis and not known to have died by the end of 2008.

## People Living with HIV/AIDS by Gender and Race/Ethnicity

Although men and women comprise equal proportions of the population in San Francisco, men represent 92% of both people living with AIDS (PLWA) and people living with HIV (PLWH). Women represent 6% of both PLWA and PLWH. Transpersons, a majority of whom are transfemales, make up approximately .03% of the general population, but disproportionately represent 2% of both PLWA and PLWH (Exhibit 21).

### EXHIBIT 21 PLWA and PLWH non-AIDS by Gender, 2008

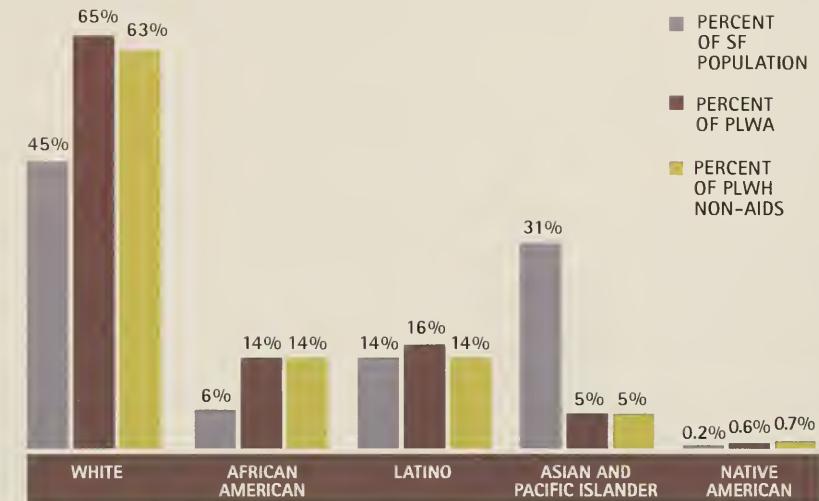


Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008

\*Transpopulation is an estimate based on McFarland 2007 and a study conducted in the 1990s that found a 3:1 ratio between transfemales and transmales (Clements-Nolle et al 2001). This estimate is not based on the U.S. Census Bureau.

All racial/ethnic groups in San Francisco are affected by HIV and AIDS. However, African Americans and Whites continue to be disproportionately affected compared with their numbers in the general population (Exhibit 22). African Americans make up 6% of San Francisco's population but represent 14% of both PLWH and PLWA in San Francisco. Whites make up 45% of the city's population but represent 63% of PLWH and 65% of PLWA. The number of Latinos living with HIV and AIDS is proportionate to their numbers in the general San Francisco population. They comprise 14% of the population and 14% of PLWH and 16% of PLWA (Exhibit 22). Asian and Pacific Islanders represent 31% of the general population, but they make up only 5% of both PLWH and PLWA. Native Americans make up only 0.2% of San Francisco's population and a very small proportion of PLWH and PLWA. Native Americans might be disproportionately affected by HIV compared with their numbers in the general population in San Francisco. However, this is difficult to assess over time due to small numbers.

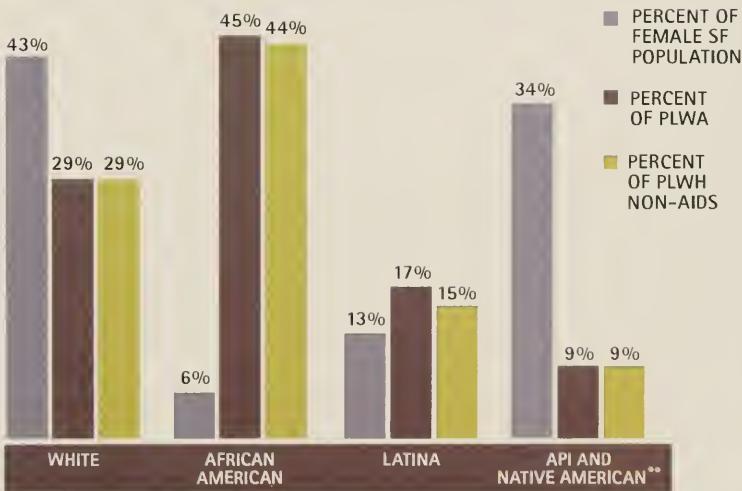
## EXHIBIT 22 PLWA and PLWH non-AIDS by Race/Ethnicity, 2008



Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008 and U.S. Census Bureau, 2008 American Community Survey

As shown in Exhibit 23, a large proportion of female PLWH and PLWA are African American, followed by White (both at 29%) and Latino (17% and 15%). As in the general population, African American women are dramatically affected by HIV and AIDS compared with their population in the city. Although African American women make up only 6% of the general population, 45% of female PLWA and 44% of PLWH are African American.

## EXHIBIT 23 Race/Ethnicity of Female PLWA and PLWH non-AIDS, 2008\*



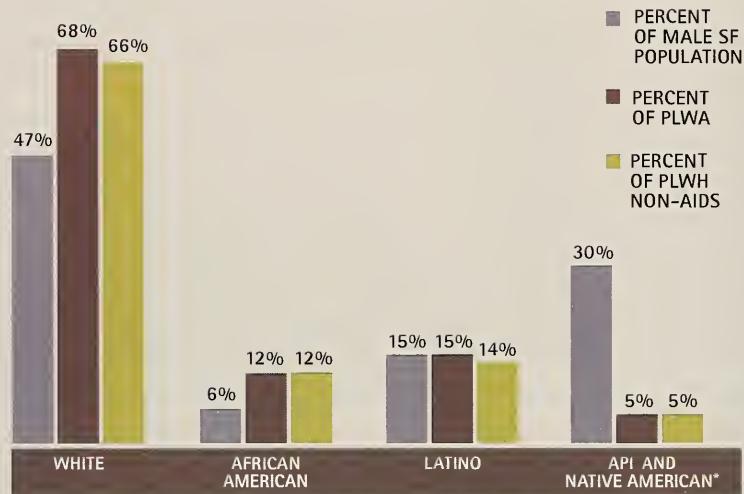
Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008 and U.S. Census Bureau, 2008 American Community Survey

\*Other race/ethnicity categories are not included in the exhibit due to small population size.

\*\*Data for Native American by gender are combined with Asian and Pacific Islander due to small population size.

Among men, the majority of PLWH and PLWA are White (68% and 66% respectively). Latinos make up the second largest ethnic group for both male PLWH (14%) and PLWA (15%) (Exhibit 24). African Americans make up only 6% of the male population in San Francisco. Despite their small number in the population, African American men represent 12% of all male PLWH and PLWA.

EXHIBIT 24 Race/Ethnicity of Male PLWA and PLWH non-AIDS, 2008\*



Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008 and U.S. Census Bureau, 2008 American Community Survey

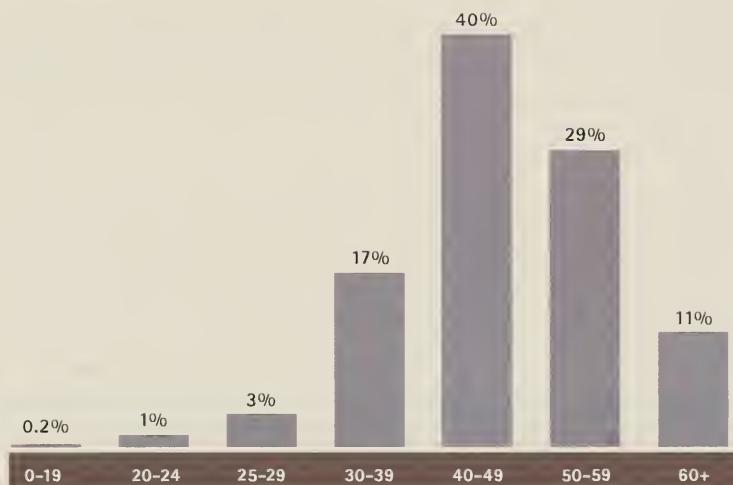
\*Other race/ethnicity categories are not included in the exhibit due to small population size.

\*\*Data for Native American by gender are combined with Asian and Pacific Islander due to small population size.

## People Living with HIV/AIDS by Age

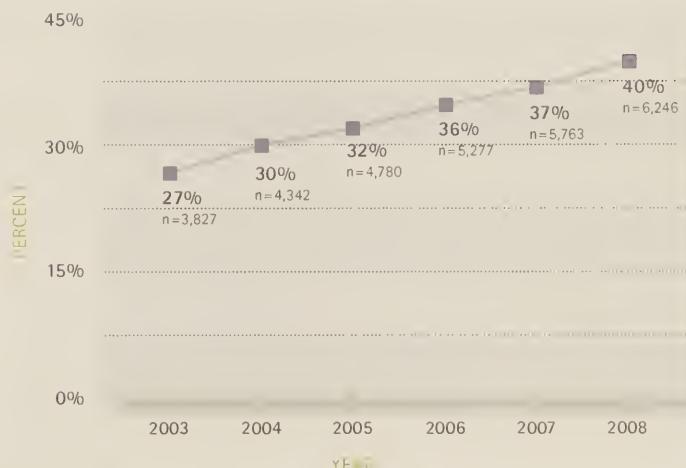
The majority of people living with HIV/AIDS (PLWHA) in San Francisco are between the ages of 30-59 years (86%) (Exhibit 25). The proportion of PLWHA who are age 50 and older (40%) is growing, likely due to the success of antiretroviral treatments. Between 2003 and 2008, the number of PLWHA age 50+ has increased steadily from 27% to 40% (Exhibit 26). Youth age 24 and under make up 23% of San Francisco's population but less than 2% of PLWHA. It is important to note that while youth represent a small proportion of PLWHA, it is likely that PLWHA between the ages of 20-30 years old were infected when they were much younger.

EXHIBIT 25 Age of Persons Living with HIV/AIDS, December 2008



Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008

EXHIBIT 26 PLWHA Age 50 and Older, 2003-2008



Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008

## People Living with HIV/AIDS by Mode of Transmission

A large proportion of PLWHA was exposed to HIV infection via MSM sexual contact (71%) followed by IDUs (20%). Among the estimated PLWHA who were exposed to HIV through IDU, more than half were MSM (61%) (Exhibit 27). The most frequent mode of transmission for male PLWHA was MSM across all race/ethnicities. Among females, IDU and heterosexual contact were the most frequent mode of transmission for PLWHA.

**PLWHA by Gender, Mode of Transmission, and Race/Ethnicity, 2008**  
EXHIBIT 27

	WHITE		AFRICAN AMERICAN		LATINO		ASIAN AND PACIFIC ISLANDER & NATIVE AMERICAN		TOTAL NUMBER**
MSM	7,895	81%	900	53%	1,771	82%	612	82%	11,285
IDU (non-MSM)	304	3%	332	20%	71	3%	26	3%	739
MSM-IDU	1,318	14%	291	17%	211	10%	70	9%	1,906
Heterosexual	26	<1%	60	4%	37	12%	11	1%	139
Other	9	<1%	6	<1%	8	<1%	7	1%	31
No reported risk	145	1%	95	6%	61	3%	21	3%	401
<b>SUBTOTAL</b>	<b>9,697</b>		<b>1,686</b>		<b>2,159</b>		<b>747</b>		<b>14,501</b>
IDU	161	61%	232	57%	57	40%	24	30%	480
Heterosexual	66	25%	124	30%	61	42%	44	56%	300
Other	8	3%	8	2%	9	6%	4	5%	31
No reported risk*	31	12%	43	11%	17	12%	7	9%	105
<b>SUBTOTAL</b>	<b>266</b>		<b>407</b>		<b>144</b>		<b>79</b>		<b>916</b>
Transpeople	78		119		94		44		340
<b>TOTAL</b>	<b>10,041</b>		<b>2,212</b>		<b>2,397</b>		<b>870</b>		<b>15,757</b>

Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008

\*Larger proportions of PLWH non-AIDS cases were reported without risk information compared to living AIDS cases. Risk information is expected to be more complete in the future as name-based HIV reporting system matures (SFDPH 2008e).

\*\*Includes persons with multiple race or whose race/ethnicity information is not available.

The following section provides information on the number of newly diagnosed HIV cases in 2008. Data includes persons with a diagnosis of HIV/non-AIDS, an initial diagnosis of HIV/non-AIDS and later diagnosed with AIDS, and concurrent diagnosis of HIV and AIDS. In 2008, 434 persons were diagnosed with HIV.

### Characteristics of Persons Newly Diagnosed with HIV

The tables below show the number and characteristics of persons whose initial HIV diagnosis occurred in 2008. The number includes both code-based and name-based HIV cases reported to SFPDH and does not include HIV-positive persons who are not aware of their infection or cases that have not yet been reported, and therefore should be interpreted with caution. The majority of persons diagnosed with HIV in 2008 were male (n=391, 90%); half were White (n=215, 50%) followed by Latino (n=96, 22%) and African American (n=68, 16%) (Exhibits 28 and 29).

African Americans and Whites are disproportionately affected by HIV. African Americans make up 6% of San Francisco's population but represent 16% of new HIV diagnoses in 2008. Whites make up 45% of the population and represent half of new HIV cases in 2008. A large proportion of persons newly diagnosed with HIV in 2008 were between the ages of 25-49 (80%) at age of diagnosis (Exhibit 30). MSM sexual contact (70%) was the primary mode of transmission for new HIV infection in 2008, followed by IDU (including MSM-IDU) (17%) (Exhibit 31).

#### EXHIBIT 28 2008 HIV Cases by Gender

GENDER	NUMBER	PERCENT
Male	391	90%
Female	33	8%
Transfemale (MTF)	10	2%
Transmale (FTM)	0	-
<b>TOTAL</b>	<b>434</b>	<b>100%</b>

Source: San Francisco Department of Public Health, special data request, May 2009

#### EXHIBIT 29 2008 HIV Cases by Race/Ethnicity

RACE/ETHNICITY	NUMBER	PERCENT <sup>*</sup>
White	215	50%
Latino	96	22%
African American/Black	68	16%
Asian and Pacific Islander	37	9%
Native American/Alaskan Native	2	<1%
Multiracial	3	1%
Unknown	13	3%
<b>TOTAL</b>	<b>434</b>	<b>100%</b>

Source: San Francisco Department of Public Health, special data request, May 2009

<sup>\*</sup>Percent do not total to 100 due to rounding.

## EXHIBIT 30 2008 HIV Cases by Age

AGE AT HIV DIAGNOSIS	NUMBER	PERCENT
0-19	10	2%
20-24	34	8%
25-29	71	16%
30-39	153	35%
40-49	125	29%
50-59	34	8%
60+	7	2%
<b>TOTAL</b>	<b>434</b>	<b>100%</b>

Source: San Francisco Department of Public Health, special data request, May 2009

## EXHIBIT 31 2008 HIV Cases by Mode of Transmission

MODE OF TRANSMISSION	NUMBER	PERCENT
MSM	304	70%
IDU	29	7%
MSM-IDU	43	10%
Heterosexual contact	26	6%
Other/No identified risk	32	7%
<b>TOTAL</b>	<b>434</b>	<b>100%</b>

Source: San Francisco Department of Public Health, special data request, May 2009

## HIV PREVALENCE AND INCIDENCE ESTIMATES

The SFDPH periodically estimates population size, HIV incidence, and BRPs in San Francisco. This section provides the 2006 HIV incidence and prevalence estimates by BRP in San Francisco<sup>2</sup>. It includes the estimated population size of each BRP, the projected number and rate of new HIV infections, HIV prevalence estimates, and comparisons to the 2001 estimates. While the estimates presented here are for 2006, researchers believe they are valid for the period 2007-2009. These numbers are calculated approximately every five years by SFDPH for the HPPC using a rigorous consensus-based process. More than 50 sources of data were used and a range of methodologies employed to determine the most plausible estimates in an expedient manner. The complete report, "HIV in San Francisco: Estimated Size of Populations at Risk, HIV Prevalence and HIV Incidence for 2006" developed by Dr. Willi McFarland can be obtained from SFDPH.

The following exhibit summarizes the HIV/AIDS consensus estimates by BRP in San Francisco for the years 2001 and 2006. The arrows indicate whether the number appears to be increasing, decreasing, or remaining stable between 2001 and 2006. Overall, there was a 10% decrease in the estimated number of new HIV infections in 2006 compared to 2001—from 1,084 in 2001 to 977 in 2006. This modest decrease is in fact a much greater success than it appears, because it marks the reversal of an increasing trend from 1995 to 2001. Moreover, had the estimate of the MSM population not increased so substantially, the number of new infections would have declined by even more.

<sup>2</sup> Consensus estimates are updated approximately every five years as additional data sources are available. Prior to 2006, the last HIV consensus estimate was derived for 2001. As of this writing, an interim estimate is expected in 2010.

The true success of San Francisco is revealed when examining the incidence rates, as opposed to the incidence numbers. The HIV incidence rate, or the percentage of uninfected persons who will become infected with HIV in a given year, declined in virtually all of the BRPs. These decreases ranged from slight among non-IDU females and non-IDU, non-MSM males, to substantial among transfemales and transfemale-IDU. If the incidence rates from 2001 had continued, San Francisco would have had 1,301 new infections in 2006 instead of the estimated 977 – or 33.2% more infections.

MSM continue to have the highest HIV incidence number of all the BRPs. However, the increase in the number of new infections is due to the increase in estimated population size, not a rise in the epidemic. Although transfemales and transfemale-IDUs have the two smallest population sizes among the BRPs, they have the two highest HIV incidence rates.

### EXHIBIT 32 2001 vs. 2006 Consensus Estimates by BRP<sup>3</sup>

POPULATION		INCIDENCE NUMBER	INCIDENCE RATE	PREVALENCE NUMBER	PREVALENCE PERCENT	POPULATION SIZE
MSM non-IDU	2001	748	2.2%	12,786	27.3%	46,800
	2006	772	1.75%	14,205	24.3%	58,343
MSM-IDU	2001	87	4.6%	2,080	52.2%	3,982
	2006	79	2.58%	2,196	42.0%	5,234
Transfemale non-IDU	2001	102	6.2%	513	23.8%	2,160
	2006	42	3.78%	327	22.8%	1,434
Male IDU (non-MSM)	2001	45	0.6%	900	10.0%	9,000
	2006	31	0.51%	954	13.5%	7,076
Female IDU	2001	48	1.1%	485	10.0%	4,850
	2006	18	0.51%	423	10.5%	4,030
Transfemale IDU	2001	40	13.2%	537	63.9%	840
	2006	16	6.08%	194	43.2%	449
Female non-IDU <sup>a</sup>	2001	10	<0.1%	334	<0.1%	331,163
	2006	12	<0.1%	298	<0.1%	325,801
Male non-IDU (non-MSM) <sup>b</sup>	2001	2	<0.1%	82	<0.1%	283,928
	2006	5	<0.1%	82	<0.1%	266,441
Perinatal <sup>c</sup>	2001	2	-	49	-	-
	2006	2	-	27	-	-
Blood product exposure <sup>d</sup>	2001	0	-	51	-	-
	2006	0	-	29	-	-
<b>TOTAL<sup>e</sup></b>	2001	1,084		17,817	2.6%	682,723
	2006	977		18,735	2.8%	668,808

a These numbers represent all females 15 years old and older excluding IDUs. For 2001, the estimated size of the female non-IDU population at risk is 5,000. For 2006, the estimated size of the female non-IDU population at risk is 8,999, and among the at-risk group, the prevalence is 3.3% and the incidence rate is 0.14%.

b These numbers represent all males 15 years old and older excluding MSM, IDUs, and transpersons. For 2001, the estimated size of the male non-IDU (non-MSM) population at risk is 2,000. For 2006, the estimated size of the male non-IDU (non-MSM) population at risk is 2,585, and among the at-risk group, the prevalence is 3.2% and the incidence rate is 0.19%.

c The number of infants born to HIV-positive mothers is estimated at 13 out of a total of 8,579 births in San Francisco in 2006; there are 27 persons living in San Francisco whose HIV was acquired through mother-to-child transmission.

d The hypothetical population of persons who might be exposed to blood products is not estimated; there are 29 persons living in San Francisco who acquired HIV through exposure to infected blood products.

e The estimated population size for San Francisco adults aged 15 and older was 682,723 in 2001 and 668,808 in 2006. The HIV prevalence estimates provided represent the prevalence among adults aged 15 and older. The overall HIV prevalence in San Francisco, based on the total population including those under 15, was 2.3% in 2001 and 2.5% in 2006.

3 Consensus estimates are derived for populations that roughly correspond to the HPPC's BRP model as defined in the 2004 HIV Prevention Plan. The complete report, "HIV in San Francisco: Estimated Size of Populations at Risk, HIV Prevalence and HIV Incidence for 2006" developed by Dr. Willi McFarland (SFPDPH 2007) can be obtained from SFPDPH.

**Cumulative Deaths in Persons with AIDS: 18,866****Deaths in Persons with AIDS in 2008: 160**

AIDS mortality data is important because it shows who might or might not be accessing or benefiting from current medical and other interventions. Since the beginning of the epidemic, a total of 18,866 deaths occurred among all AIDS cases in San Francisco. In 2008, a total of 160 deaths occurred among people with AIDS.

AIDS mortality data from 2008 is presented in this section. However, reporting of deaths in recent years is not yet complete due to reporting delay. Thus, the numbers presented in this section are incomplete and may be adjusted in subsequent years as data becomes available. Additionally, deaths that occurred outside of San Francisco are identified through matching with the National Death Index (NDI) which is not yet complete for 2007 and 2008. For complete AIDS mortality data from previous years, refer to pp. 20-26 of the HIV/AIDS Annual Report (2008).

**AIDS Mortality by Gender, Race/Ethnicity, and Age**

In 2008, the largest number of deaths of persons with AIDS occurred among men (80%) and Whites (64%). However, the HIV/AIDS-related mortality rate for African Americans was higher compared to other racial/ethnic groups (Exhibits 33 and 34). In regard to age, most AIDS deaths occurred among persons between the ages of 40-59 years. According to San Francisco AIDS surveillance data, the largest number of cumulative AIDS deaths occurred in the 30-39 age group. It is only recently that most AIDS deaths have shifted to the 40-49 year old age group, followed by the 50-59 year old age group (Exhibit 35).

**Mortality and HIV Case Fatality Rates**

- Mortality rates look at what proportion of a general population (e.g., San Francisco population) die of a particular disease.
- Case fatality rates examine a smaller population, such as people living with HIV/AIDS. It can be useful in determining over time, what proportion of all people living with HIV/AIDS die as a cause of HIV/AIDS.

**EXHIBIT 33 Deaths in Persons with AIDS by Gender, 2008**

GENDER	NUMBER OF DEATHS IN PERSONS WITH AIDS	PERCENT OF TOTAL DEATHS IN PERSONS WITH AIDS	MORTALITY RATE (PER 100,000 ESTIMATED SF POPULATION)	HIV CASE FATILITY RATES (PER 100 LIVING CASES)*
Male	128	80%	31	0.9
Female	21	13%	5.3	2.3
Transpeople **	11	7%	#	3.2
OVERALL	160	100%	-	-

Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008

\*Case fatality rate is calculated by dividing the number of deaths in a subgroup by the total number of living cases in that subgroup and multiplying by 100.

\*\*Transpeople is not broken down by transmales and transfemales due to small sample size.

# Data not available.

## EXHIBIT 34 Deaths in Persons with AIDS by Race/Ethnicity, 2008

RACE/ETHNICITY	NUMBER OF DEATHS IN PERSONS WITH AIDS	PERCENT OF TOTAL DEATHS IN PERSONS WITH AIDS	MORTALITY RATE (PER 100,000 ESTIMATED POPULATION)	CASE FATALITY RATES (PER 100 LIVING CASES)*
White/Caucasian	102	64%	29	1.0
African American/Black	36	23%	75	1.6
Latino/Hispanic	17	11%	15	0.7
Other**	5	3%	#	0.5
<b>TOTAL</b>	<b>160</b>	<b>100%</b>	<b>-</b>	<b>-</b>

Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008

\*Case fatality rate is calculated by dividing the number of deaths in a subgroup by the total number of living cases in that subgroup and multiplying by 100.

\*\*Other includes Asian and Pacific Islander, Native American, and multiracial due to small sample numbers.

# Data not available.

## EXHIBIT 35

## Deaths in Persons with AIDS by Age, 2008

AGE	NUMBER OF DEATHS IN PERSONS WITH AIDS	PERCENT OF TOTAL DEATHS IN PERSONS WITH AIDS	MORTALITY RATE (PER 100,000 ESTIMATED POPULATION)	CASE FATALITY RATES (PER 100 LIVING CASES)*
0-19	0	0%	0	0
20-24	0	0%	0	0
25-29	1	0.6%	#	0.2
30-39	11	7%	#	0.4
40-49	57	36%	#	0.9
50-59	59	37%	#	1.3
60+	32	20%	20	1.9
<b>TOTAL</b>	<b>160</b>	<b>100%</b>	<b>-</b>	<b>-</b>

Source: San Francisco Department of Public Health, special data request, September 2009

\*Case fatality rate is calculated by dividing the number of deaths in a subgroup by the total number of living cases in that subgroup and multiplying by 100.

# Data not available.

## AIDS Mortality by Mode of Transmission

More than half of AIDS-related deaths in 2007 occurred among the MSM (54%). Deaths among persons with AIDS who were exposed to HIV/AIDS through IDU or MSM-IDU accounted for 21%-22% of deaths. (Exhibit 36).

EXHIBIT 36

### Deaths in Persons with AIDS by Mode of Transmission, 2008

MODE OF TRANSMISSION	NUMBER OF DEATHS IN PERSONS WITH AIDS	PERCENT OF TOTAL DEATHS IN PERSONS WITH AIDS	MORTALITY RATE (PER 100,000 ESTIMATED POPULATION)	CASE FATALITY RATES (PER 100 LIVING CASES)*
MSM	99	54%	#	0.9
IDU (non-MSM)	38	21%	#	3.1
MSM-IDU	40	22%	#	2.0
Heterosexual	4	2%	#	0.9
Other/Unknown**	3	2%	#	0.6
<b>TOTAL</b>	<b>184</b>	<b>100%</b>	-	-

Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008

\*Case fatality rate is calculated by dividing the number of deaths in a subgroup by the total number of living cases in that subgroup and multiplying by 100.

\*\*Includes cases with no identifiable risk.

# Data not available.

### Underlying Causes of Death among Persons with AIDS

In 1995-1998, the proportion of deaths in which HIV/AIDS was listed as the underlying cause of death was 92%. This decreased in 1999-2002 and has remained level at 82% through 2003-2006. During this time period (2003-2006), heart disease (20%), liver disease (14%), viral hepatitis (14%), and pneumonia (13%) were listed as other frequently occurring underlying causes of death among persons with AIDS (Exhibit 37).

EXHIBIT 37

### Top Eight Underlying Causes of Death among Persons with AIDS, 1995-2006

UNDERLYING CAUSE OF DEATH	YEAR OF DEATH		
	1995-1998 N=3,215 NUMBER (PERCENT)	1999-2002 N=1,295 NUMBER (PERCENT)	2003-2006 N=1,161 NUMBER (PERCENT)
HIV/AIDS	2,971 (92)	1,103 (85)	957 (82)
Heart disease	483 (15)	252 (20)	230 (20)
Liver disease	218 (7)	206 (16)	160 (14)
Viral hepatitis	125 (4)	163 (13)	159 (14)
Pneumonia	496 (15)	200 (15)	152 (13)
Non-AIDS cancer (e.g., lung cancer, liver cancer, anal cancer, & Hodgkins lymphoma)	209 (7)	117 (9)	154 (13)
Septicemia	219 (7)	123 (10)	134 (12)
Renal disease	133 (4)	105 (8)	123 (11)

Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008

## **Gender and Race/Ethnicity**

**Males are disproportionately affected by HIV/AIDS.** Although men make up 51% of San Francisco's population, they represent 92% of the PLWA and 94% of all AIDS cases reported to date (Exhibit 14). In 2008, males accounted for 90% of new HIV diagnoses in San Francisco (Exhibit 28).

**Transpersons are also disproportionately affected by HIV/AIDS.**

Transpeople are disproportionately affected compared with their small numbers in the general population. Transpersons make up less than 1% of the total population in San Francisco, the majority of whom are transfemales, but account for 2% of PLWHA and 1% of AIDS cases to date (Exhibit 14 and Exhibit 21).

**African Americans and Whites are greatly impacted by HIV/AIDS.**

All racial/ethnic groups in San Francisco are affected by HIV and AIDS in San Francisco. However, African Americans and Whites continue to be disproportionately affected. African Americans make up 6% of San Francisco's population, but account for 14% of PLWHA and 13% of all AIDS cases reported to date. Additionally, the AIDS mortality rate for African Americans in 2007 was higher compared to other racial/ethnic groups. Whites make up 45% of the population and represent 65% of PLWA and 63% of PLWH. Overall, Whites comprise 71% of cumulative AIDS cases in San Francisco (Exhibit 15 and 22). Among Whites, males are disproportionately affected by HIV/AIDS. Both African American men and women are disproportionately affected by HIV and AIDS compared to their number in the general population (Exhibits 23 and 24).

**Women of color represent a large proportion of PLWA.** African American women, in particular, are disproportionately affected by HIV/AIDS. In San Francisco, over 70% of females living with AIDS are women of color. Additionally, 45% are African American women (Exhibit 23).

**It is likely that AIDS cases and PLWHA are undercounted among the Native American population in San Francisco.** The number of Native Americans living in San Francisco is small and the number of PLWHA is few among this group. Native Americans might be disproportionately affected by HIV compared with their numbers in the general population in San Francisco, but due to small numbers, it is difficult to assess the impact of HIV/AIDS and trends over time. However, as in other jurisdictions, it is possible that Native Americans are undercounted due to misclassification of Native Americans into other racial/ethnic groups.

**The number of Latinos living with HIV and AIDS is proportionate to their numbers in the population.** Among PLWA and PLWH Latinos make up the second largest racial/ethnic group in San Francisco. In 2008, Latinos had the second highest incidence (22%) of new HIV diagnoses after Whites (50%) (Exhibit 29).

## **Age**

**The number of PLWHA who are age 50 and older is growing.** This age group was the fastest growing age category of PLWHA, rising from 27% to 40% between 2003 and 2008 (Exhibit 26).

## **Mode of Transmission**

**MSM-IDU account for more than half of all IDU-associated HIV and AIDS cases in San Francisco.** MSM-IDU make up 65% of all IDU-associated cumulative AIDS cases reported to date (Exhibit 17). Of the estimated 3,125 PLWHA who were exposed to HIV through injection drug use, 61% were MSM-IDU (Exhibit 27).

## SPECIAL POPULATIONS FOR CONSIDERATION

Among male PLWHA, MSM non-IDU was the most frequent mode of transmission across all race/ethnicities. MSM non-IDU comprises 78% of all male PLWHA (Exhibit 27). Of the estimated 2,212 African American PLWHA, over 40% are MSM (Exhibit 27).

Among women living with HIV/AIDS the most frequent mode of transmission is IDU and heterosexual contact. Over half of female PLWHA were exposed to HIV infection through injection drug use (52%) and about a third were exposed through heterosexual contact (33%) (Exhibit 27).

### Incarcerated Individuals

Nationally, HIV prevalence is five times higher among inmates than the general population. Approximately one-quarter of PLWHA passes through the correctional system, and nationwide, it has been estimated that 2.3% of inmates are HIV-positive (Springer et al 2005). Recent HIV prevalence data for inmates is not available for San Francisco, but there is data on the number of PLWHA who have a history of being incarcerated in the San Francisco jail system. At the end of 2006, 1,292 (9%) individuals living with HIV/AIDS had a history of incarceration in county jail. Among these, about three-quarters are IDUs and 16% are MSM non-IDUs (Exhibit 21). Outside of jail or prison, incarcerated individuals are likely to be impacted by many other factors in their lives that increase their risk for HIV, including substance use, untreated mental illness, homelessness, poverty, and prostitution. A full discussion of incarceration as a cofactor for HIV/AIDS is available in the Community Assessment Chapter, pp. 135-137.

# SECTION III Indicators of Risk

## Core Question 3:

### What are the indicators of risk for HIV infection in San Francisco?

#### Drivers

- Some HIV indicators such as gonorrhea and methamphetamine use are also drivers of HIV.
- Drivers are factors that independently increase risk for HIV and are associated with a substantial number of new infections throughout San Francisco. (For more on drivers, see the Community Assessment Chapter, Section II: Drivers, pp. 115–124).

HIV indicators are defined as diseases or conditions known to follow or precede the pattern of HIV infection. HIV indicators may signal high-risk behavior taking place among a population. In some cases, HIV indicators can be used to predict trends in HIV infection. Some of the HIV indicators presented in this section are also considered drivers, such as gonorrhea and methamphetamine use (see the Community Assessment Chapter: Section II: Drivers, pp. 115-124). Other indicators such as syphilis and chlamydia are not considered to be drivers because they are not associated with large proportions of new infections in San Francisco. Additionally, some of the HIV indicators presented in this section such as sexually transmitted infections (e.g., gonorrhea) and substance use (e.g., cocaine/crack use) are also considered cofactors (For more on cofactors, see the Community Assessment Chapter, Section III: HIV Cofactors, pp. 125-147).

The following indicator data is presented by risk group. The IDU BRP has been broken down into subpopulations of IDU and grouped with other BRPs with which it shares similar indicators. For example, FSM-IDU is pulled out from the IDU BRP and grouped with FSM because they share similar indicators.

### MSM, MSM/F, MSM-IDU, MSM/F-IDU<sup>4</sup>

**Sexually Transmitted Infections.** Both gonorrhea and syphilis infection are biological markers for high risk sexual behavior. Gonorrhea has been identified as a driver of HIV in San Francisco (see the Community Assessment Chapter: Section II: Drivers, pp. 115 - 124). Among men particularly, rectal gonorrhea is an indicator of unprotected receptive anal sex. Male rectal gonorrhea has increased steadily in the last several years, but started to level off in 2007 (Exhibit 38). A decrease in the number of infections with gonorrhea continued to decline in 2008. After a steep increase between 1998 and 2004, early syphilis infections among MSM began to decline in 2005 (HIV/AIDS Annual Report 2007); however, STI data shows an increase in the number of infections for 2008. Analysis of subsequent years will be necessary to determine whether this increase signals an upward trend.

**Sexual Partners and Behavior.** Outreach survey data from the Stop AIDS Project suggests an overall trend of increasing unprotected anal intercourse (UAI) for both self-reported HIV-positive MSM and HIV-negative MSM. Among MSM living with HIV, data also suggests an increase in UAI with one or more sex partners whose HIV status was not known to them.

**Substance Use.** Substance use is strongly associated with risk for HIV acquisition. Methamphetamine use among MSM decreased from 21% in 2004 to 13% in 2008, while cocaine/crack use increased from 21% to 29%. Use of poppers remained stable.

<sup>4</sup> Behavioral risk populations or BRPs are categories that describe behavioral risk for HIV and are used to identify who is at risk. These abbreviations refer to BRPs as defined in the Priority Setting Chapter, pp. 156-157

## EXHIBIT 38 Trends in HIV Indicators for MSM, MSM/F, MSM-IDU, MSM/F-IDU

INDICATOR	TREND	DATA	DATA SOURCE	
<b>SEXUALLY TRANSMITTED INFECTIONS (STI)</b>				
Male rectal gonorrhea	Decreasing	2004 – 340 cases 2005 – 409 cases 2006 – 520 cases 2007 – 467 cases 2008 – 422 cases	STD Prevention & Control surveillance data	
Primary and secondary syphilis	Decreasing, increase in 2008	2004 – 325 cases 2005 – 216 cases 2006 – 220 cases 2007 – 186 cases 2008 – 309 cases	STD Prevention & Control surveillance data	
<b>SEXUAL PARTNERS AND BEHAVIORS</b>				
Mean number of sex partners in past 2 months*	No change	2003 – 5.38 2004 – 5.41 2005 – 5.68 2006 – 5.50 (1 <sup>st</sup> half)	City Clinic data <sup>†</sup>	
Mean number of sex partners in past 3 months*	No change	2006 – 7.34 (2 <sup>nd</sup> half) 2007 – 6.36 partners 2008 – 6.74 partners	City Clinic data <sup>†</sup>	
Unprotected anal sex in the past 6 months	HIV- Increasing	HIV+ 2004: 54% 2004: 33% 2005: 46% 2005: 37% HIV+ Increasing	2006: 57% 2006: 44% 2007: 67% 2007: 43%	STOP AIDS Project
Unprotected anal sex with at least one partner of unknown serostatus in past 6 months	HIV- Decreasing	HIV+ 2004: 21% 2004: 4% 2005: 9% 2005: 12% HIV+ Increasing	2006: 13% 2006: 10% 2007: 18% 2007: 9%	STOP AIDS Project
<b>SUBSTANCE USE</b>				
Percent reporting methamphetamine use in past 12 months	Decreasing	2004 – 21% 2008 – 13%	National Health Behavior Surveillance (NHBS) <sup>++</sup>	
Percent reporting poppers use in past 12 months	No change	2004 – 18% 2008 – 19%	NHBS	
Percent reporting heavy alcohol use in past 12 months**	Inconclusive	2004 – Not available 2008 – 89%	NHBS	
Percent reporting cocaine/crack use in past 12 months	Increasing	2004 – 21% 2008 – 29%	NHBS	

\*Prior to the 2nd half of 2006, information was collected on the number of sex partners in the past 6 months. Starting in 2007, this measure was changed to look at the number of sex partners in the past 3 months.

\*\*Alcohol use was not measured in 2004.

City Clinic data only represents those who seek testing and services at City Clinic, thus data is not generalizable to the larger population, and should be interpreted with caution.

<sup>†</sup>The National HIV Behavioral Surveillance System (NHBS) is a multisite project funded by the CDC. Established to identify behaviors that place individuals at-risk for contracting HIV/AIDS, NHBS collects data in 21 metropolitan areas, including San Francisco, that have the highest prevalence of HIV/AIDS cases.

## Trends in HIV Indicators for MSF and MSF-IDU<sup>5</sup>

**Sexually Transmitted Infections.** In recent years, syphilis infections have remained relatively low among heterosexual men compared to MSM. Similar to MSM, there was an increase in the incidence of syphilis among MSF in 2008 (Exhibit 39).

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**Sexual Partners and Behavior.** Recent data also indicate slight increases in the number of sexual partners among MSF signaling an ongoing need to monitor risk behaviors and HIV transmission among this group.

EXHIBIT 39

### Trends in HIV Indicators for MSF, MSF-IDU

INDICATOR	TREND	DATA	DATA SOURCE
<b>SPECIFIC TRANSMITTED INFECTION ACTIVITY</b>			
Primary and secondary syphilis	Decreasing, increase in 2008	2004 – 23 cases 2005 – 27 cases 2006 – 18 cases 2007 – 13 cases 2008 – 25 cases	STD Prevention & Control surveillance data
<b>SEXUAL BEHAVIOR</b>			
Mean number of sex partners in past 2 months*	May be increasing slightly	2003 – 2.04 2004 – 2.05 2005 – 1.97 2006 – 2.18 (1 <sup>st</sup> half)	City Clinic data <sup>†</sup>
Mean number of sex partners in past 3 months*	No change	2006 – 2.56 (2 <sup>nd</sup> half) 2007 – 2.58 2008 – 2.39	City Clinic data <sup>†</sup>

\* Prior to the 2nd half of 2006, information was collected on the number of sex partners in the past 2 months. Starting in 2007, this measure was changed to look at the number of sex partners in the past 3 months.

† City Clinic data only represents those who seek testing and services at City Clinic, thus data is not generalizable to the larger population, and should be interpreted with caution.

5 Behavioral risk populations or BRPs are categories that describe behavioral risk for HIV and are used to identify who is at risk. These abbreviations refer to BRPs as defined in the Priority Setting Chapter, pp. 156-157.

## Trends in HIV Indicators for FSM and FSM-IDU<sup>6</sup>

**Sexually Transmitted Infections.** Chlamydia is considered a cofactor for HIV infection in San Francisco (for more on chlamydia, see the Community Assessment Chapter 2, Section III: Cofactors, pp. 125 - 147). While STI data shows no clear trend in either chlamydia or gonorrhea among women, infection rates continue to be high (Exhibit 40).

**Sexual Partners and Behavior.** Although the mean number of sexual partners among FSM decreased between 2003-2005, there has been a steady increase in recent years starting in 2006 (Exhibit 40).

EXHIBIT 40

### Trends in HIV Indicators for FSM, FSM-IDU

INDICATOR	TREND	DATA	DATA SOURCE
<b>SEXUALLY TRANSMITTED INFECTIONS (STIs)</b>			
Chlamydia	No clear trend	2004 – 1778 2005 – 1769 2006 – 2054 2007 – 1872 2008 – 1909	STD Prevention & Control surveillance data
Gonorrhea	Decreasing	2004 – 231 2005 – 348 2006 – 331 2007 – 269 2008 – 289	STD Prevention & Control surveillance data
<b>SEXUAL PARTNERS</b>			
Mean number of sex partners in past 2 months*	Decreasing, increase in 2006	2003 – 2.67 2004 – 2.06 2005 – 1.97 2006 – 2.63 (1 <sup>st</sup> half)	City Clinic data <sup>†</sup>
Mean number of sex partners in past 3 months*	Increasing	2006 – 2.98 (2 <sup>nd</sup> half) 2007 – 3.15 2008 – 4.14	City Clinic data <sup>†</sup>

\* Prior to the 2nd half of 2006, information was collected on the number of sex partners in the past 6 months. Starting in 2007, this measure was changed to look at the number of sex partners in the past 3 months.

† City Clinic data only represents those who seek testing and services at City Clinic, thus data is not generalizable to the larger population, and should be interpreted with caution.

## HIV Indicators for TMSM and TFSM<sup>7</sup>

Unlike for other BRPs, there is very few trend data for transmales and transfemales. Currently, data collection on transpersons is limited. First, transmales and transfemales are not differentiated in the data. Additionally, data specifically on the sexual partners of transpersons is not collected (e.g., transmales who have sex with males (TMSM) or transfemales who have sex with males (TFSM)). An important HIV indicator is unprotected receptive anal sex. The rates of unprotected receptive anal sex among transfemales, as determined by four original studies, is discussed in the Community Assessment Chapter (see Transfemales section, pp. 75-78).

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**Sexually Transmitted Infections.** Primary and secondary syphilis among transpersons living in San Francisco remains low (Exhibit 41).

**Sexual Partners and Behavior.** The mean number of sexual partners among transpersons appears to be increasing. However, small sample size leads to wide variation in data; therefore, this data does not point to any definitive conclusions and should be interpreted with caution (Exhibit 41).

### EXHIBIT 41

#### Trends in HIV Indicators for Trans Population

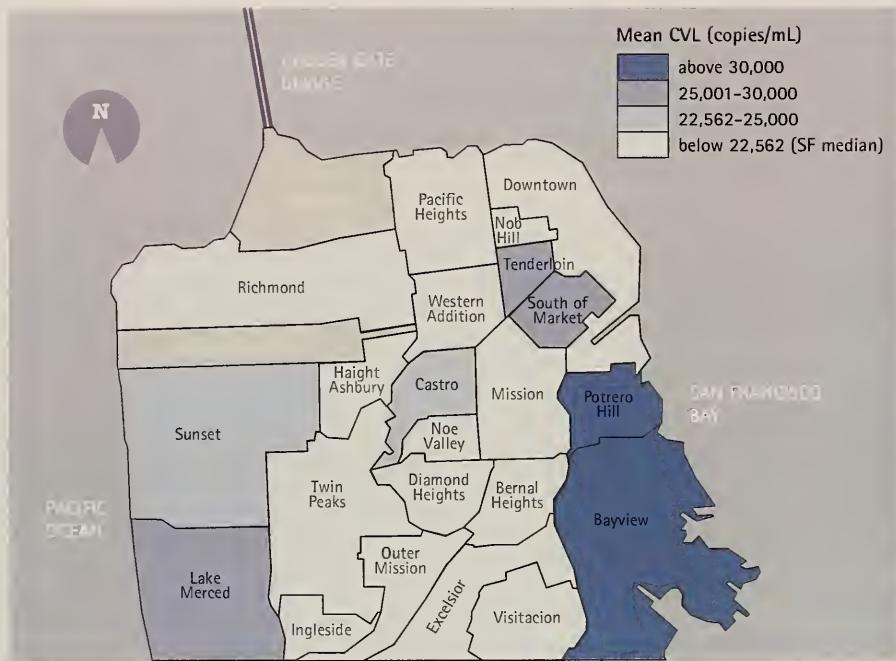
INDICATOR	TREND	DATA	DATA SOURCE
<b>SEXUALLY TRANSMITTED INFECTIONS (CONT.)</b>			
Primary and secondary syphilis	Remains low	2004-2008 – 9 cases	STD Prevention & Control surveillance data
<b>SEXUAL PARTNERS</b>			
Mean number of sex partners in past 6 months*	Unclear, possibly increasing	2003 – 6.18 2004 – 7.05 2005 – 12.67 2006 – 16.18 (1 <sup>st</sup> half)	City Clinic data <sup>†</sup>
Mean number of sex partners in past 3 months*	Unclear, possibly increasing	2006 – 13.8 (2 <sup>nd</sup> half) 2007 – 17.78 2008 – 25.13	City Clinic data <sup>†</sup>

\* Prior to the 2nd half of 2006, information was collected on the number of sex partners in the past 6 months. Starting in 2007, this measure was changed to look at the number of sex partners in the past 3 months.

† City Clinic data only represents those who seek testing and services at City Clinic, thus data is not generalizable to the larger population and should be interpreted with caution.

<sup>7</sup> Behavioral risk populations or BRPs are categories that describe behavioral risk for HIV and are used to identify who is at risk. These abbreviations refer to BRPs as defined in the Priority Setting Chapter, pp. 156-157

## EXHIBIT 42 Spatial Distribution of Mean CVL in San Francisco, 2005-2007



Source: San Francisco Department of Public Health, special request, October 2009

### What is Community Viral Load?

#### COMMUNITY VIRAL LOAD

Community viral load (CVL) is a population-based marker of HIV. Here it is defined as the mean of the most recent individual viral loads of HIV-infected individuals in a particular community. The San Francisco Department of Public Health (SFDPH) routinely collects viral load information as part of HIV surveillance.

### What does CVL measure?

The SFDPH has recently begun to look at CVL as a possible biologic indicator of the health of people living with HIV/AIDS in the county. It is hoped that in the future, by looking at CVL levels for a particular community or population, providers and planning groups can assess how to better prioritize both prevention and treatment resources, and that CVL will serve as a sensitive barometer of the success of these efforts.

### What do Initial CVL Studies in San Francisco Show?

An initial analysis of CVL in San Francisco was conducted using HIV/AIDS surveillance data from 2006-2007. The mean CVL in San Francisco is around 20,000 copies/mL. Initial analysis shows that the disparities in CVL match our understanding of the disparities in the HIV epidemic based on socioeconomic status, race/ethnicity, use of antiretroviral therapy, transmission risk category, trans status, hepatitis C-coinfection, and engagement in health care. Exhibit 42 shows the geographic distribution (by neighborhood) of the mean community viral load in San Francisco. Three of the four neighborhoods of Potrero Hill, Bayview, South of Market, and the Tenderloin that have the highest mean CVL in the city have the lowest median household incomes in San Francisco. The CVL for the homeless population is double the overall San Francisco mean CVL. It is important to note that this definition of CVL is the mean load of individuals in a given neighborhood, but does not reflect the total burden of HIV in the neighborhood.

For instance, individuals in the Castro have a relatively low mean viral load, but the burden of HIV in the Castro remains high because of the high number of HIV cases there. The SFDPH is currently exploring how the total CVL within a neighborhood compare with the mean viral loads shown here.

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## What are Some of the Limitations of CVL Data?

CVL analyses include only those individuals in the HIV surveillance registry. It does not include persons who are acutely infected with HIV, persons who have not received a diagnosis (about 15-17% of PLWHA), and those persons who have missing viral load information.

## What's Next?

CVL is a novel approach for looking at the health of a community affected by HIV/AIDS. Further studies are necessary to refine this approach and ensure that it provides accurate and useful information for providers and planning groups. The SFDPH is currently examining trends in CVL over time and the relationship between CVL and new HIV infections.

# Service Utilization and Access to Services

## SECTION IV

### Core Question 4:

**What are the patterns of service utilization of HIV-positive persons in San Francisco?**

### Core Question 5:

**What are the number and characteristics of persons who know they are HIV-positive but who are not receiving primary HIV medical care?**

This section provides some information on utilization of HIV/AIDS services in San Francisco and characteristics of PLWHA accessing primary HIV medical care. Understanding who is and is not accessing HIV medical care and why is important for prioritizing services and planning for outreach and recruitment. In addition, information about people living with HIV who are not in medical care, including possible reasons why they are not accessing medical care, can assist planners in developing strategies to reduce barriers to care. Information in this section is derived from the following data sources:

**REGGIE System.** The REGGIE System is San Francisco's HIV healthcare services data reporting system. Data regarding the most utilized HIV services was obtained from this source and includes both Ryan White CARE-funded services as well as services that are not funded by this funding stream. Due to limitations in data collection, the REGGIE System does not include PLWHA utilizing HIV services provided by private clinics and medical settings such as Kaiser Permanente.

**HIV Prevention Programs Core Variables Data.** San Francisco HIV prevention programs funded by SFDPH collect data (known as core variables data) on clients who participated in one or more prevention interventions on a quarterly basis. In this section, the core variables data is used to examine participation in prevention with positives programs.

**HIV/AIDS Surveillance Data.** Information about antiretroviral use, access to HIV medical care, and unmet need for HIV medical care among PLWHA was obtained through analysis of HIV/AIDS surveillance data. This data includes information obtained from laboratory

reporting of viral load and CD4 test results, medical record chart reviews, data from Medi-Cal, the AIDS Drug Assistance Program (ADAP), and Kaiser Permanente Northern California.

**2008 HIV/AIDS CARE Needs Assessment.** In 2008, the San Francisco HIV Health Services Planning Council (CARE Council) conducted a needs assessment to identify the needs of priority populations living with HIV/AIDS in the San Francisco Eligible Metropolitan Area (SF EMA). Data from the needs assessment was used in this section to describe factors affecting access to HIV services among PLWHA.

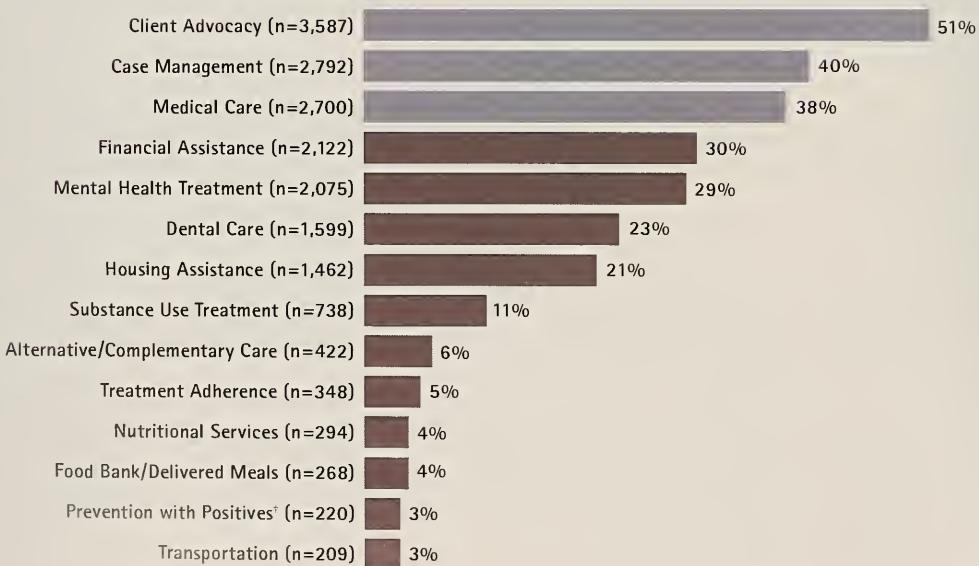
## Utilization of HIV Services

### SERVICE UTILIZATION AMONG PLWHA

Exhibit 43 illustrates utilization of medical care, dental health care, mental health services, case management services, and substance use services among a sample of people living with HIV/AIDS in San Francisco. It also includes information on utilization of services such as financial assistance, housing assistance, and client advocacy. Data is presented by number and percent of unduplicated clients (UDC) who utilized a particular service category in 2008. Clients may be counted in more than one service category; thus, UDC counts are overestimates. Among the 7,046 UDC reported in 2008, more than half received some level of client advocacy services (n=3,587, 51%), which include benefits counseling, treatment advocacy, and peer advocacy. Forty percent (n=2,792) received some level of case management and 38% (n=2,700) received medical services. Some of the clients also received nutritional services (n=294, 4%), prevention services (n=220, 3%), and transportation assistance (n=209, 3%).

### EXHIBIT 43 Number\* and Percent of Unduplicated Clients (UDC) for Most Utilized Services, San Francisco, 2008

N= 7,046 Total UDC



Source: HIV Health Services, special data request, April 2009.

<sup>\*</sup>Represents the number of unduplicated clients who utilized particular service category. This number includes both clients who were eligible to receive services and those clients who were determined to be ineligible for services after an initial encounter and assessment of eligibility.

<sup>†</sup>This number represents only a fraction of the total number of PWP services because providers are not required to report this service in the HIV Health Services database REGGIE.

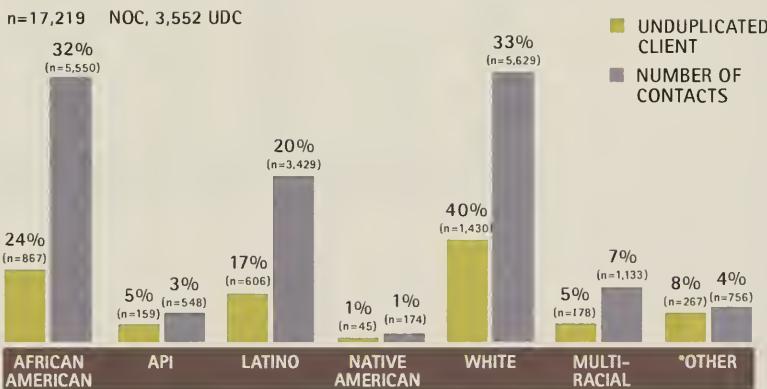
## Participation in PWP Programs

PWP is one of five highlighted areas in this plan (see the Strategies and Interventions Chapter, Section V: Prevention with Positives, pp. 192-195). This section provides information about participants of PWP programs funded by the HIV Prevention Section of SFPDPH during the 2008-2009 fiscal year. This includes clients participating in individual risk reduction counseling, prevention case management, single session groups, and multiple session workshops provided by 24 agencies who administer a total of 39 community-based HIV prevention programs. More information about PWP can be found in the Strategies and Interventions Chapter, Section V: Prevention with Positives (pp. 192-195).

During the 2008-2009 fiscal year (July 2008-June 2009), a total of 3,552 unduplicated individuals participated in PWP programs in San Francisco. The following exhibits depict participation in PWP programs by race/ethnicity and age. Information on both unduplicated clients (UDC) and number of contacts (NOC) are provided. Because clients might participate in a program at more than one agency and thus be counted twice, UDC counts are overestimates of the total number of individuals served. Most of the PWP program participants were White (n=1,430, 40%) followed by African American (n= 867, 24%), and Latino (n= 606, 17%) (Exhibit 44). Additionally, most participants during this quarter were between the ages of 40-49 years of age (n=1,413, 40%) (Exhibit 45).

EXHIBIT 44

### PWP Participants by Race/Ethnicity, July 2008-June 2009



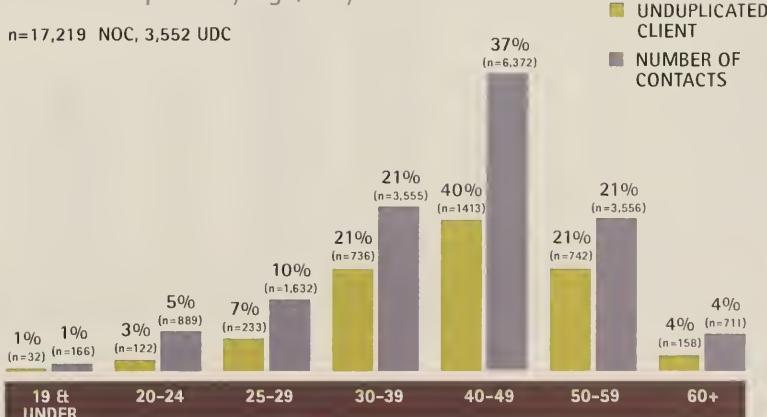
Source: San Francisco Department of Public Health, special data request December 2009

\* Other category includes data with missing race/ethnicity information.

EXHIBIT 45

### PWP Participants by Age, July 2008-June 2009

n=17,219 NOC, 3,552 UDC



Source: San Francisco Department of Public Health, Core Variables Quarterly Report, October-December 2008

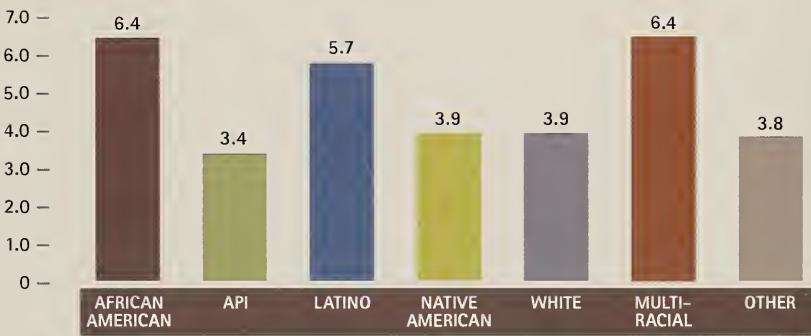
\* Individuals who did not report age were categorized as "missing" and not included above.

The following exhibits depict the average number of contacts made by PWP participants by race/ethnicity and age. Overall, the average number of contacts during the fourth quarter of 2008 was 3.0 contacts (Exhibit 46). African American, Latino, and multiracial groups made contacts with PWP programs more than the average. The average number of contacts for Asian and Pacific Islanders and Native Americans, on the other hand, were about two times less than the overall average. Persons under 30 years of age made contacts with PWP programs more than the average (Exhibit 47).

**EXHIBIT 46 Average Number of Contacts of PWP Participants by Race/Ethnicity, July 2008-June 2009**

n=17,219 NOC, 3,552 UDC

Average NOC = 4.8 contacts

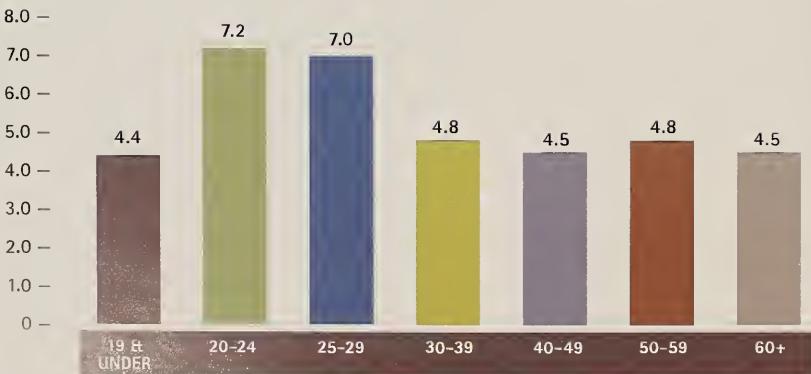


Source: San Francisco Department of Public Health, special data request, December 2009

**EXHIBIT 47 Average Number of Contacts of PWP Participants by Age, July 2008-June 2009**

n=17,219 NOC, 3,552 UDC

Average NOC = 4.8 contacts



Source: San Francisco Department of Public Health, Core Variables Quarterly Report, October-December 2008

## **Antiretroviral Therapy Use (ART)**

**ART use among persons living with AIDS:** It is estimated that between 88% and 92% of persons living with AIDS were receiving antiretroviral therapy (ART) as of December 31, 2008. When comparing ART use across different sectors of the population, ART use appeared slightly lower among females, transpersons, African Americans and Latinos. In addition, use of ART among Native Americans and IDUs was lower compared to other groups.

**ART use among persons living with HIV, non-AIDS (CD4 count between 200 and 350):** Overall, about 70% of persons with HIV who were eligible for ART treatment received ART. Lower percentages of females and transpersons received ART compared to males. People of color, especially African Americans and Asians, also had lower rates of ART use. IDUs had the lowest rate of ART use of all populations.

### **ACCESS TO HIV MEDICAL CARE**

Between 2005 and 2007, it is estimated that 84% of newly infected patients diagnosed at SFDPH testing sites had confirmed entry into medical care, receiving medical care within 12 months of their HIV diagnosis. The following sections describe the number and characteristics of PLWHA accessing HIV medical care as well as those with unmet need for HIV medical care as estimated by the SFDPH HIV Epidemiology Section.

### **Number and Characteristics of PLWHA in HIV Medical Care**

In order to assess the number and percentage of PLWHA receiving care, an initial CD4 test within 12 months of diagnosis was used as a marker for entry into medical care (Exhibit 48).

Of the estimated 1,884 persons diagnosed with HIV from 2005 to 2007, 84% received a CD4 count within 12 months of diagnosis. When comparing across different sectors of the population, about equal percentages of males and females were accessing care (88% and 85%, respectively). Whites had the highest rate of entry into medical care (88%), followed by Asian and Pacific Islanders (84%) and African Americans (81%). The lowest rates of entry into medical care were among Latinos (80%) and individuals in the "Other" race/ethnicity category (63%). Comparing across age groups, older individuals 50 years old and older tended to have higher rates of entry into medical care.

## EXHIBIT 48 Characteristics of PLWHA Accessing HIV Medical Care

	NUMBER OF HIV CASES DIAGNOSED FROM 2005–2007	PERCENT RECEIVING AT LEAST ONE CD4 TEST WITHIN 12 MONTHS OF DIAGNOSIS
<b>TOTAL</b>	<b>1,884</b>	<b>84%</b>
<b>TIME OF DIAGNOSIS</b>		
HIV and AIDS diagnosed in same month	288	99%
AIDS diagnosed more than one month after HIV diagnosis	313	93%
HIV, not AIDS	1,283	78%
<b>SEX</b>		
Male	1,741	88%
Female	143	85%
<b>RACE/ETHNICITY</b>		
White	1,042	88%
Asian and Pacific Islander	113	84%
African American	285	81%
Latino	373	80%
Other	71	63%
<b>AGE</b>		
13–29	424	82%
30–39	687	85%
40–49	546	84%
50+	227	86%
<b>MODE OF TRANSMISSION</b>		
MSM	1,293	85%
IDU	142	87%
MSM-IDU	226	83%
Heterosexual	103	92%
Other/no reported risk	120	61%

Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008

\*Data for transgender not available.

\*\*Native American and multiracial data is grouped with "Other" due to small sample size.

## Number and Characteristics of PLWHA with Unmet Need for HIV Medical Care

PLWHA were identified as having their primary medical care needs met if they had received ART or had at least one CD4 count or viral load test within 12 months. Exhibit 49 illustrates the numbers and percentages of individuals identified as having unmet need for HIV medical care, broken down by population. Overall, 21% of all PLWHA in San Francisco were identified as having unmet need. This includes a total of 825 (8%) PLWA and 3,286 (36%) PLWH who did not receive medical care. Unmet need was higher among African Americans and those less than 10 years old. IDUs and heterosexuals were also found to have higher unmet need for medical care compared to other groups.

## Estimating Unmet Need for HIV Medical Care

- Unmet need for care is defined as not having had a laboratory test or receipt of antiretroviral therapy during a 12-month period.
- Estimation of unmet need for medical care for PLWA and PLWH in San Francisco included analysis of care data from laboratory reporting of viral load and CD4 results, medical record chart reviews, and data from Medi-Cal, the AIDS Drug Assistance Program (ADAP), the AIDS Regional Information and Evaluation Systems (ARIES), and Kaiser Permanente Northern California.
- Unmet need estimates include both San Francisco residents and non-residents diagnosed with HIV/AIDS in San Francisco. Estimates do not include undiagnosed or unreported cases.

Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008

### EXHIBIT 49 Characteristics of PLWHA with Unmet Need for HIV Medical Care, July 2006-June 2007

	PLWA (N=10,028)		PLWH (N=9,061)		PLWHA (N=19,089)	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
<b>TOTAL</b>	825	8%	3,286	36%	4,111	21%
Male	782	8%	3,017	35%	3,799	21%
Female	43	7%	269	37%	312	23%
White	399	6%	1,937	34%	2,336	19%
African American	190	13%	547	40%	737	26%
Latino	159	10%	465	35%	624	21%
Asian and Pacific Islander	52	11%	174	37%	226	24%
Other	25	27%	163	43%	188	40%
20-29	20	10%	373	51%	393	42%
30-39	163	12%	956	41%	1,119	30%
40-49	148	3%	1,238	34%	1,386	17%
50-59	372	12%	557	30%	929	18%
60+	99	9%	131	23%	230	14%
SEX OF TRANSMISSION						
MSM	581	8%	2,172	32%	2,753	20%
IDU	76	9%	381	61%	457	30%
MSM-IDU	96	7%	510	51%	606	25%
Heterosexual	31	10%	143	53%	174	31%
Other/unidentified risk	41	17%	80	12%	121	14%

Source: San Francisco Department of Public Health, HIV/AIDS Epidemiology Annual Report 2008

\*Data for transpersons not available

\*\*Native American and multiracial data is grouped with "Other" due to small sample size.

\*\*\* The age category 0-19 years was omitted due to small sample size.

## Factors Affecting Access to HIV Medical Care Services

In 2008, the San Francisco HIV Health Services Planning Council (CARE Council) conducted a needs assessment<sup>8</sup> to identify the needs of priority populations living with HIV/AIDS in the SF EMA. As part of the needs assessment, a client survey was administered to 248 severe needs PLWHA within the San Francisco EMA, which includes Marin and San Mateo counties. One of the client survey questions asked participants to determine whether certain factors, such as transportation, affect access to HIV medical care services. Forty-four percent of all survey respondents faced difficulty obtaining a service due to transportation issues, 13% reported always having a problem. Availability of services, namely service hours of operation, was also a problem for respondents. Approximately 42% of participants "sometimes" or "always" had challenges obtaining services due to service hours. Analyses of the data showed that service hours affected older participants more often than they did younger respondents.

### Challenges and Barriers to Obtaining HIV/AIDS Services (n=248)

CHALLENGES AND BARRIERS	ALWAYS	SOMETIMES	NEVER
Transportation	13%	31%	57%
Service hours	7%	35%	59%
Cultural sensitivity	4%	15%	81%
Language	3%	10%	87%

*Source: 2008 San Francisco EMA HIV/AIDS Health Services Needs Assessment (SFDPH 2008)*

*Note: This data includes survey participants living and/or receiving HIV services in Marin and San Mateo counties.*

As part of the needs assessment, a total of six focus groups were conducted with three special populations (Marin County residents, monolingual Spanish-speaking residents, and people age 50 or older) to gather in-depth, qualitative information about their use of HIV/AIDS related services, continued service needs, and challenges/barriers encountered when receiving services. Focus group participants were asked whether they experienced any barriers or challenges to receiving HIV/AIDS-related services. While participants did not report any barriers to receiving medical care, the following were excerpted from the report to illustrate key challenges faced by participants to accessing HIV services.

**Awareness of available services and benefits.** Participants agreed that they do not have sufficient information about the services and benefits for which they may be eligible and noted that this information should be publicized and disseminated widely. Participants also spoke about the difficulty of navigating the system of services and benefits, especially with respect to prescription drug coverage under Medicare Part D.

**Eligibility for services and benefits.** In addition to the challenges of finding out about available services, participants explained that due to income requirements for services such as free dental care and AIDS Drug Assistance Program (ADAP), middle-income individuals often face challenges obtaining needed medications and care.

Moreover, individuals with unmet needs in San Francisco face other multiple barriers to entering HIV care, including chronic mental illness or substance use, recent incarceration, poverty, homelessness, complications related to aging, and competing needs such as food, shelter, and child care. These factors point to the importance of helping individuals living with HIV achieve personal stability so they can access care on a more consistent basis, as well as the importance of linking underserved populations quickly from HIV testing to care (SFDPH 2008c).

<sup>8</sup> The complete report, "2008 San Francisco EMA HIV/AIDS Health Services Needs Assessment" (SFDPH 2008) may be obtained online (<http://www.sfcarecouncil.org/Documents/docs/SF%20Final%20Report%20FINAL%20DRAFT%20092208.pdf>).

## IMPLICATIONS FOR HIV PREVENTION AND CARE OF PLWHA

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San Francisco's HIV prevention and care services continue to have an impact on the lives of people living with and affected by HIV/AIDS. PLWHA in San Francisco have access to a client-centered continuum of care. Ryan White CARE services alone reach over 6,800 people each year with medical care, case management, and other much-needed social and support services. Overall, the number of new HIV infections in the city has decreased, largely due to successful HIV prevention strategies that focus on populations at highest risk for acquiring and transmitting HIV, and address the disproportionate effects of HIV and AIDS. As in most communities, HIV and AIDS are not distributed evenly across all populations. In San Francisco, the populations disproportionately affected compared with their numbers in the population include African Americans, Whites, and transpersons. Among Whites, men are disproportionately affected while both African American men and women are disproportionately affected by HIV/AIDS compared to their numbers in the population. Transpersons represent a small percentage of San Francisco's population, but are profoundly affected by high HIV prevalence and incidence. Planning and implementing prevention and care services should include special attention to populations who are disproportionately affected by HIV and AIDS and/or who are increasingly affected by HIV and AIDS in recent years. Moreover, some populations experience substantial barriers to accessing care services, such as stigma and discrimination, as well as social and economic hardships that have been shown to be linked to HIV risk. Special consideration should be taken to ensure that both the prevention and care needs of such populations are addressed.

## NEED FOR IMPROVED DATA COLLECTION

Improved data collection is needed for some populations to ensure that providers are better informed and have the most complete data possible when planning and prioritizing care and prevention services.

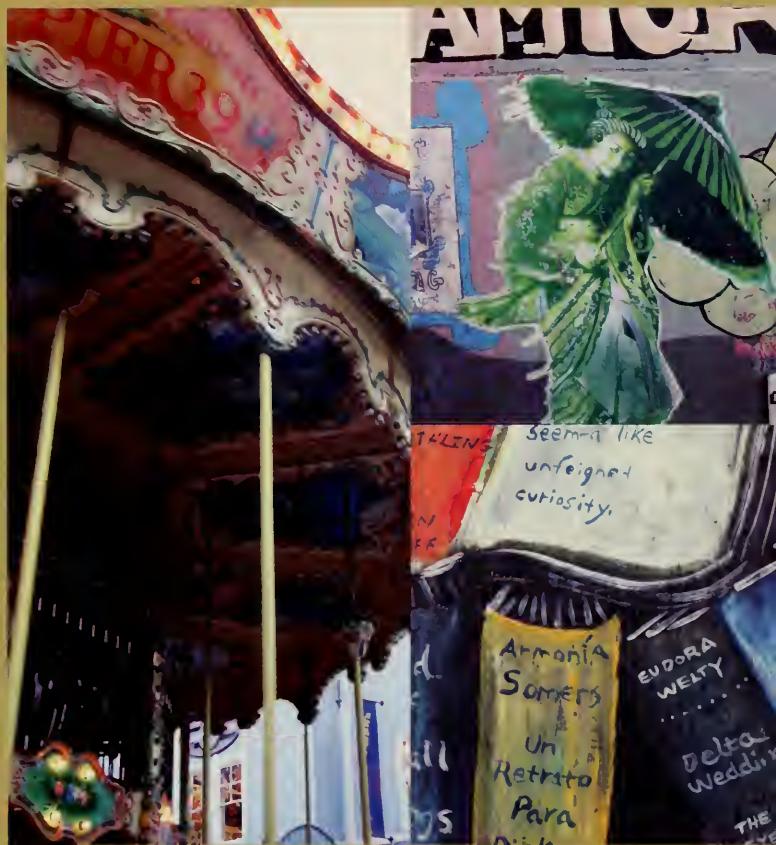
**Trans Population.** Trans status is inconsistently collected and reported across different data systems (e.g., HIV/AIDS surveillance data, STI surveillance data, as well as service utilization data systems), resulting in incomplete data for these populations. In San Francisco, a workgroup comprised of SFDPH representatives, providers, planners, and stakeholders have convened to assess the way in which a number of variables for demographic data (e.g., race/ethnicity, sex/gender, sexual orientation) are being collected. An important goal of the Community Assessment, System Program/Evaluation, and Research (CASPER) workgroup is to yield improved data on trans communities by developing principles for the collection of sex and gender demographic variables that are more inclusive of trans and intersex identities.

**Native Americans.** Native Americans are often misclassified into other racial categories resulting in an undercount of the total number of PLWHA among this group. Improved collection of data on Native Americans is necessary to ensure effective prevention and care services for this population.



# 2

## Community Assessment



## CHAPTER OUTLINE

# Chapter 2

**Introduction** ..... 61

### **Section I: Populations**

Describes the epidemiologic, behavioral, and other data for populations at risk for acquiring or transmitting HIV. Describes the HIV Prevention Planning Council's (HPPC) recommended approaches for HIV prevention with these populations. 62

### **Section II: Drivers**

Reviews the factors that are considered to be the driving force behind new HIV infections in San Francisco. Provides data that demonstrates the rationale for why these factors are considered drivers. 115

### **Section III: Cofactors**

Discusses how different cofactors affect HIV risk and who is affected by these cofactors in San Francisco. Describes the HPPC's recommended approaches for addressing these cofactors. 125

**Appendix 1: Resource Inventory** ..... 147

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Heterosexual Men	86
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# Introduction

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## PURPOSE OF CHAPTER

The purpose of this chapter is to describe what is known about the needs of different San Francisco populations and the factors that affect their risk. It combines epidemiologic and behavioral data with community voices and experience to create a comprehensive "story" about different people living with and at risk for HIV in San Francisco. This chapter is intended to provide information that HIV prevention and other programs can use to better understand the needs of the populations they serve. It encourages HIV prevention providers to think about, design programs for, and target their efforts toward individuals and communities based on their needs, as documented in current research, as well as their lived experiences.

## HOW TO READ THIS CHAPTER

**This chapter is about people, not Priority Setting.** The HIV Prevention Planning Council (HPPC) sets priorities for populations and makes recommendations for funding based on epidemiologic and behavioral data. This process and the 2010 priorities are described in a different chapter – Chapter 3: Priority Setting. In contrast, this chapter is about people and the everyday realities they face that affect their risk. In this chapter, populations and risk factors are not prioritized, they are just described.

**This chapter is organized into three sections: Populations, Drivers, and Cofactors.** The Populations section is placed first because this chapter is primarily about people. The Drivers section is placed second to highlight the most important factors affecting people's HIV risk in San Francisco and to emphasize their importance in the HIV prevention strategy for 2010 and beyond. The last section is Cofactors, which describes a broader array of factors that may affect HIV risk.

**This chapter and Chapter 3: Priority Setting complement each other.** If you are reading the Priority Setting chapter, you might notice that a particular population or issue is prioritized (for example, Asian and Pacific Islander Men who have Sex with Men (MSM)). To learn more, you could then read the following related sections in this chapter: Asian and Pacific Islander People, Gay Men, Bisexual Men, and perhaps others, depending on the particular group of Asian and Pacific Islander MSM you are interested in learning more about. Conversely, if you are reading this chapter, you might find the data for a particular population or issue compelling (for example, substance use). You could then go to the Priority Setting chapter to see if or how this issue is prioritized for funding. In this case, you would see that several substances are prioritized as both drivers and cofactors, and it differs by population.

**This chapter is not designed to be read cover to cover.** Instead, it is structured so that readers can select the section or sections most relevant to their needs and interests. The chapter outline on p. 60 lists all the chapter topics in alphabetical order with corresponding page numbers.

**Readers might need to review more than one section to get a complete picture of the needs of a particular group.** For example, chapter sections relevant to Latino immigrant MSM might include: Latinos, Gay Men, Bisexual Men, Men who have Sex with Men Who Identify as Heterosexual, Immigration and Language, and Access to Services.

**This chapter is about San Francisco populations specifically.** Because the epidemiology of HIV in San Francisco is different than in other locations, this chapter relies primarily on research conducted with San Francisco populations, except when there is insufficient local information. In those cases, studies conducted in other U.S. urban areas are described. In addition, when possible, studies and data published in 2001 or later are used.

**The length of each chapter section is not an indicator of level or risk or of how high a priority a population or issue is.** Some sections are

longer than others because more data is available, or because the data is so limited that most or all of the data can be presented. When there has been substantial debate among researchers or among community members on an issue, various sides of the debate and the related evidence is presented, sometimes increasing the length of the section.

## TERMS & DEFINITIONS

**COFACTOR** A condition that can increase risk for HIV, increase susceptibility to infection, or decrease ability to receive and act upon HIV prevention messages.

**DRIVER** A driver is an underlying condition that is directly linked to a large number of new infections throughout San Francisco. By definition, drivers should be items that are affecting the high-risk behavioral risk populations, or BRPs (MSM, Transfemales who have Sex with Males (TFSM), or Injection Drug Users (IDU)), since that's where the bulk of new infections are.

# SECTION I Populations

## INTRODUCTION

In the 1990s, the HPPC began a practice of identifying and prioritizing populations for HIV prevention based on risk behaviors. Because there was so much stigma around HIV, the HPPC wanted to highlight the fact that HIV risk is not about a person's identity, but rather about behaviors. The HPPC developed the BRP model for setting priorities (see Chapter 3: Priority Setting, pp. 152-164 for more information). Under this model, people are categorized into groups based on their gender, the gender of their sexual partners, and whether or not they inject drugs. This model has helped ensure that HIV prevention reaches the populations at highest risk for acquiring and transmitting HIV.

An important limitation of the BRP model is that the categories do not necessarily reflect how people identify themselves. Even though HIV prevention providers receive funding for particular BRPs, usually they try to reach out to people based on individual or community identity. As such, providers need to understand and be responsive to people based on their identities as much (if not more so) than on their behaviors. The goal of this section is to describe the needs of different populations based on some common identities or characteristics that are not entirely accounted for in the BRP model. The chapter sections are not mutually exclusive, because people have multiple identities; for example, one might find information about women in various sections (e.g., Native Americans, Injection Drugs Users), not just under "Women". When the Populations section of this chapter is used in combination with the Drivers and Cofactors sections, as well as the Priority Setting model outlined in Chapter 3, readers should be able to construct an overall picture of the needs of the populations they are trying to reach and to what extent they are a priority for HIV prevention in San Francisco.

Within each section below, the epidemiology, behaviors, and factors affecting HIV risk that are most relevant for the population are described, followed by a brief summary of the HPPC's recommendations for HIV prevention for each group. It should be noted that for all groups, it is critically important that service providers develop collaborations with multiple health and social service agencies, so that clients' multiple needs can be addressed. It is unrealistic to expect that any one program or agency can be equipped to handle every client situation. Examples of important resources that should be available on site or through referral include HIV testing, STI screening and treatment, disclosure assistance services (to support people in discussing their HIV status with their partners), substance use and mental health treatment, housing services, financial assistance, and medical and other health and social services for people living with HIV.

## What Are the HIV Prevention Needs of People Living with HIV?

### Epidemiology

Thorough data on people living with HIV/AIDS (PLWHA) in San Francisco is presented in Chapter 1: Epidemiologic Profile (pp. 10-57). In summary, most PLWHA are white, are MSM, and are over age 30. More African Americans are living with HIV/AIDS than would be expected, given their proportion of the overall population in San Francisco.

### Behavior

It is essential to understand trends in behavior among people living with HIV (PLWH), because high-risk behavior can lead to transmission of HIV to others or to infection with STIs, some of which are drivers for HIV transmission. Questions remain about whether so-called "superinfection," in which a person living with HIV might be reinfected with the same HIV strain or coinfected with another strain, is a substantial risk and what its health consequences might be (Cheonis 2005). Most studies on the behavior of people living with HIV focus on sexual behavior rather than needle sharing behavior, and in particular on two main issues: (1) unprotected sex, and (2) disclosure of HIV status.

**Unprotected sex.** Since more effective therapies for HIV have become available, many PLWH have been living healthier and more sexually active lives. The complex issues affecting the gay community (see the section on Gay Men, p. 66) have affected both HIV-negative and individuals living with HIV and have implications for sexual behavior. MSM living with HIV as well as heterosexual men and women, have reported unprotected anal sex with partners who are either HIV-negative or of unknown serostatus in multiple studies (Chen et al 2002, Colfax et al 2002, Courtenay-Quirk et al 2008, Mansergh et al 2002, O'Leary et al 2003). In one of these studies, which was conducted with men and women living with HIV in San Francisco and two other cities, 27% percent of participants reported serodiscordant unprotected anal or vaginal sex (Courtenay-Quirk et al 2008). (Note that most studies, like this one, do not assess risks related to frontal sex, the term used among transmales for vaginal sex. This type of sex may carry different risks. For more information, see the section on Transmales, p. 80.) Another study, which should be interpreted with caution due to its small sample size, found that individuals who recently seroconverted reported engaging in high-risk behavior both during their seroconversion period and up to one year after, a period during which they may be highly infectious due to high viral load (Colfax et al 2002). In this study, individuals reduced but did not eliminate their high-risk behavior upon learning their serostatus.

**Disclosure of HIV-positive status.** HIV prevention providers in San Francisco who have worked with individuals living with HIV around disclosure issues, and people living with HIV themselves, have described and discussed some of the challenges and contextual factors that people living with HIV face. These conversations have happened informally (e.g., at HPPC meetings, community forums) and the following main themes are based on anecdotal information. First, disclosure of one's HIV-positive status involves a very complex and personal decision-making process influenced by social factors such as stigma, as well as community norms related to disclosure and unprotected sex. Second, social networks and norms that do not support discussion of HIV status make it difficult for a person to disclose. Third, the threat of violence or of being cut off financially if one reveals being HIV-positive or asks to use a condom can be a deterrent to safe behavior, especially among women in abusive relationships.

There is a common assumption that disclosure will result in safer sex practices, but research findings in this area are mixed. In general, research supports the notion that people living with HIV feel a responsibility to protect others from becoming infected (Collins et al 2000, Offer

et al 2007, Parsons et al 2004). Other research also suggests that some individuals see disclosure as a way to release themselves from responsibility for transmission because the decision about whether and what kind of sex to have becomes the partner's (Sheon & Crosby 2004).

In one study, disclosure appeared to be associated with safer sex practices. Gay and bisexual men living with HIV who consistently disclosed to their casual partners reported fewer risk behaviors than those who never or only sometimes disclosed (Parsons et al 2005), and those who only sometimes disclosed had the highest number of risk behaviors (Hart et al 2005, Parsons et al 2005). According to a national study among people living with HIV, sex without disclosure is more frequent among gay and bisexual men (42%) compared with heterosexual men (19%) and women (17%) (Ciccarone et al 2003). This study also found that 13% of all participants reported unprotected sex without disclosure.

Disclosure issues might be different for IDUs living with HIV compared with MSM. In a study that examined frequency of disclosure and its relationship to risk behavior, consistent disclosers reported more unprotected sex than non-disclosers (Parsons et al 2004), which is the opposite of what was learned in the study with gay and bisexual men cited earlier (Hart et al 2005, Parsons et al 2005). Another study highlighted an additional difference between IDUs and MSM – many IDUs are involved in the drugs-for-sex economy, and a qualitative study concluded that low rates of disclosure and high rates of sexual risk taking are closely related to the immediate need for obtaining drugs (Knight et al 2005).

It is noteworthy that disclosure in the MSM community in San Francisco now goes beyond just HIV status to include discussions of viral load. In one study, 56% of participants (both HIV-positive and HIV-negative) reported discussing viral load with serodiscordant partners in the prior year specifically to guide decision-making around sexual risk behavior (Guzman et al 2006). In this study, HIV-negative men who discussed viral load were more willing to engage in risk behavior with a partner living with HIV who had an undetectable viral load.

## Factors That Affect HIV Risk in San Francisco

People living with HIV are affected by the same factors as HIV-negative people, including substance use, STIs, homelessness, poverty, and many others. However, research suggests that issues related to mental and emotional health are some of the most important needs of people living with HIV. Additional cofactors that could affect HIV transmission include high viral load and lack of knowledge of HIV status.

**Mental health.** Issues that may affect the mental health of people living with HIV include discussion of their HIV status with family, friends, and partners; making or trying to maintain lifestyle changes to help them stay healthy; taking new medications and suffering side effects; employment security; health care costs; and coping with depression after learning they were living with HIV. A four-city study including San Francisco found high rates of suicidal ideation among people living with HIV (Carrico et al 2007), and another San Francisco-based study found depression to be common among homeless and marginally housed men living with HIV (Weiser et al 2006).

Specific mental and emotional health-related factors that have been linked to unsafe sex among men living with HIV include use of alcohol or drugs before sex, being less emotionally involved with one's partner, and having recently learned they were living with HIV (Marks & Crepaz 2001). MSM living with HIV, who have a history of childhood sexual abuse also report high-risk sexual behaviors that could transmit HIV, partially due to the anxiety, hostility, and suicidality resulting from the abuse (O'Leary et al 2003). Social support services are needed for individuals living with HIV, especially for those who are newly diagnosed. (See also the section on Mental Health, p. 130)

**High viral load.** HIV medication adherence issues among individuals living with HIV need to be addressed, because research strongly suggests that viral load suppression reduces infectiousness (Cohen et al 2008). Perceived adverse effects of antiretroviral therapy can lead to medication non-adherence (Johnson et al 2005).

**Lack of knowledge of HIV status.** Another very important cofactor for HIV transmission is being unaware of one's status of living with HIV. It is estimated that 20-25% of people nationwide do not know they are HIV-positive, and that some unknown portion of all new infections result from these individuals unknowingly transmitting the virus through unprotected sex (MacKellar et al 2005, Schwarcz et al 2006). In San Francisco, a quasi-population based study among MSM found an unrecognized infection rate of 19% among this group (NHBS 2008).

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## What Are the HPPC's HIV Prevention Recommendations for Individuals Living with HIV?

The term used to described HIV prevention with individuals living with HIV is prevention with positives (PWP) (see Chapter 4: Strategies and Interventions for more on how to conduct PWP, pp. 192-195). In San Francisco, the PWP definition and goals are as follows:

**PWP is any strategy or intervention that addresses the specific prevention needs of people who know they are HIV-positive.**

### The main goals of PWP are:

- **To reduce the spread of HIV and other STIs.**
- **To suppress viral load in order to promote health outcomes and reduce the opportunities of HIV infection.**
- **To help people living with HIV achieve and maintain physical, emotional, mental, sexual and reproductive health, economic stability and well-being.**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

First, not all people living with HIV are at risk for transmitting the virus. PWP should focus on the groups at highest risk for transmission, i.e., those who engage in unprotected sex or needle sharing. Individuals living with HIV should be involved in the planning and implementation of PWP programs. In addition, prevention efforts should communicate responsibility for not infecting others, but without promoting shame or stigma (Collins et al 2000).

Another important approach is to help those who are unaware of their status of living with HIV to learn it. This can be accomplished through expanding HIV testing and partner services, including targeted testing and routine testing, accompanied by structural interventions that encourage or require insurance companies or other payors to reimburse for HIV testing. For more on serostatus awareness, see Chapter 4: Strategies and Interventions, pp. 177-184. Linkages to ongoing medical care and prevention services for new and long-time individuals living with HIV are critical. In particular, case management has been associated with improving medication adherence and thus suppressing viral load and decreasing infectivity (Kushel et al 2006).

All these goals are best accomplished through strong coordination among the San Francisco Department of Public Health (SFPDH) HIV Health Services Section, the SFPDH HIV Prevention Section (HPS), the Health Services Planning Council (also known as the CARE Council), and the HPPC. One such collaboration in 2007-2008 resulted in the "Prevention with Positives: Best Practice Guide," developed by the San Francisco Points of Integration/Prevention with Positives Work Group (see <http://sfhiv.org> or contact the HIV Prevention Section for a copy). Its main points are summarized in Chapter 4: Strategies and Interventions, pp. 192-195. In addition, a joint effort between the HIV Prevention and HIV Health Services Sections resulted in a set of standards called "Linkage from HIV Testing to HIV Care: Standards of Care" (see <http://sfhiv.org/> or contact the HIV Prevention Section for a copy).

# Populations by Gender and Sexual Orientation

## PART B

### INTRODUCTION

In recent years, many studies have defined populations by behavior (e.g., men who have sex with men) as opposed to sexual orientation (e.g., gay, bisexual). Other studies group gay and bisexual men together when describing their needs and issues. Although very few studies highlight the specific needs of gay men, most men who have sex with men (MSM) in San Francisco are gay men, and thus the studies on MSM are relevant.

### What Are the HIV Prevention Needs of Gay Men?

#### GAY MEN

In San Francisco, new infections among gay men make up the vast majority of new infections, and gay men have the highest incidence rate among MSM, compared with bisexual and heterosexually identified MSM. This population needs to be the primary focus of prevention efforts and resources in order to impact the epidemic.

### Epidemiology

MSM account for approximately 87% of all new HIV infections annually in San Francisco (McFarland 2007) – 79% are non-IDUs and 8% are IDUs. Estimated HIV prevalence among MSM, including those who inject drugs, is 25.8% (McFarland 2007). (See Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates). Gay men of all races and all ages are at risk, but most new HIV diagnoses are among people who are MSM, white, and 25 to 49 years old (SFDPH 2008e). In San Francisco, overall HIV prevalence remains low among MSM younger than 25 (Catania et al 2001, MMWR 2001, Valleroy et al 2000, Waldo et al 2000), with the most recent data showing prevalence of less than 4% (Raymond 2008a, NHBS 2008), although young African American MSM have the highest prevalence among youth (MMWR 2001).

A recent study looking at HIV incidence and HIV indicators from 1998 to 2007 concluded that a hyper-endemic state of HIV infection exists among MSM in San Francisco (Scheer et al 2008). The term “hyper-endemic” means that HIV prevalence is not increasing or decreasing (“endemic”), but it still remains very high, thus the use of the prefix “hyper” (Scheer et al 2008). During this period, data show changes in sexual risk behavior patterns (e.g., an overall increase in unprotected anal sex; among HIV-negative men, a decrease in unprotected anal sex with unknown serostatus partners but an increase with potentially serodiscordant status partners). While HIV incidence fluctuated during this period, there were no consistent statistically significant upward or downward trends in HIV incidence.

### Behavior

Although the estimated number of new HIV infections among MSM increased slightly between 2001 and 2006, this change primarily reflects an increase in the MSM population size. In fact, HIV risk behavior and HIV incidence rates are estimated to have decreased during this time period (McFarland 2007). Caution should be taken when drawing conclusions from these estimates, however, because when looking at a longer time period (1998 through 2007), new infections appear more level, although they may increase or decrease somewhat from year to year (Scheer et al 2008).

Regardless of any upward or downward trends, new HIV infections are still occurring among gay men, and unprotected anal sex continues to be responsible for the majority of these new infections. Reported rates of unprotected sex vary widely by subpopulation, depending on the type of sex (receptive vs. insertive), and depending on whether the sex is with a partner of the same, vs. unknown, or different HIV status. Two possible reasons for these differences are: (1) the extent to which specific cofactors and drivers, such as methamphetamine use (see following section on Factors That Affect HIV Risk in San Francisco), are affecting individuals and

communities, and (2) the extent to which detailed knowledge about HIV and HIV transmission is used to make decisions about sexual risk behaviors.

The term used to describe the latter phenomenon is "seroadaptation," which the HPPC defines as follows:

Seroadaptation includes a range of HIV risk reduction practices and refers to the selection of sexual partners, practicees and positions based on one's own and one's partner's serostatus, in order to reduce the risk of contracting and/or transmitting HIV (HPPC meeting, October 2007).

Seroadaptation includes strategies such as choosing a partner with the same HIV status ("serosorting"), strategic positioning (people living with HIV engaging in receptive anal sex and HIV-negative engaging in insertive anal sex), withdrawal before ejaculation (Parsons et al 2005), and decisions about what type of sex to have based on the viral load of the partner living with HIV (Guzman et al 2006). The gay community has been using seroadaptation strategies for many years, but this has only recently begun to be described in the literature. Evidence of the use of such HIV risk reduction practices can be found, ironically, in increases in unprotected sex as well as syphilis and rectal gonorrhea rates among gay men in San Francisco between 1998 and 2004. When examined more closely, these data show that unprotected anal sex with unknown or different serostatus partners actually *declined* during this period (Truong et al 2006). Although seroadaptation has been well-described, there is limited evidence regarding its efficacy as an HIV prevention tool.

Finally, needle sharing among gay men who inject drugs also persists, although sexual risk appears to be the primary factor driving the epidemic. Thirty percent of MSM-IDU living with HIV in one study reported distributive syringe sharing (i.e., giving a used syringe to another person) (Kral et al 2005). Other studies have documented equal or higher rates of sharing (Bluthenthal et al 2001, Kral et al 2003), including one that documented sharing rates of 58% among a late-night MSM population (Pendo et al 2003). (See also the section on Injection Drug Users, p. 88.)

## Factors That Affect HIV Risk in San Francisco

There are numerous social, environmental, and psychological factors that affect risk behaviors among gay men. Some are considered drivers and are believed to be responsible for the majority of new HIV infections. While other factors described here are not directly linked to a large proportion of new HIV infections, they may be underlying causes of the drivers or may even be the primary risk factors for some individuals.

The most salient factors affecting risk among gay men are substance use, multiple partners, STIs, mental health issues, discrimination and stigma, gay identity, being part of a high-prevalence/high-risk sexual network, and Internet use. These issues work in tandem with each other to create a high-risk environment for gay men. For example, drug use, feelings of loneliness and isolation, and sex solicited on the Internet all work synergistically to increase HIV risk, because they affect individual behavior and influence community norms related to unsafe sex.

**Substance use.** The prevalence of drug use (non-IDU) among gay men in San Francisco is high (Exhibit 1). Drug use has been strongly associated with unsafe sexual practices and HIV seroconversion among gay men and other MSM in study after study: across all racial/ethnic and age groups (Choi et al 2005, Koblink et al 2006, Pendo et al 2003, Ramirez-Valles et al 2008, Romanelli et al 2003, Shoptaw et al 2002). While the strongest associations between drug use and HIV risk are with cocaine/crack, heavy alcohol use, methamphetamine, and poppers (see Section II: Drivers, p. 115, for supporting evidence), other recreational drugs are also popular in some segments of the gay community, such as marijuana, ketamine (Special K), GHB, and ecstasy. Gay men who "party and play" at circuit parties, at clubs, and in other settings are one group of drug users that might be at particularly high risk (Pendo et al 2003) (See p. 120 for a definition of "party and play.") Drug use not only increases the risk of unsafe sex, but can also lead to substantial negative health effects, especially for individuals living with HIV (Swanson & Cooper 2002). A summary of drug use rates reported in recent studies is provided in Exhibit 1

## EXHIBIT 1 Drug Use Rates Among Gay Men and Other MSMs in San Francisco

DRUG	PERCENTAGE REPORTING USE					
	Quasi-Population-Based Sample of MSM <sup>1</sup>	Random Digit Dial Survey of MSM <sup>2</sup>	Party 'n' Play Population <sup>3</sup>	Young Asian and Pacific Islander MSM <sup>4</sup>	Late Night MSM Population <sup>5</sup>	HIV-negative MSM <sup>6</sup>
Methamphetamine	13%	17%	54%	10%	78%	23%
Poppers	19%	26%	31%	11%	-	37%
Viagra	22%	28%	12%	-	-	-
Alcohol use	52% heavy use	-	82%	-	69%	8% heavy use
Cocaine/crack	25% used cocaine	15%	-	-	-	19% used cocaine; 6% used crack

1 NHBS 2008. Percents listed reflect usage in the last 12 months.

2 Schwarz et al 2007. Percents listed reflect usage in the last 12 months.

3 Pendo et al 2003. Party 'n' Play Study.

4 Choi et al 2005. Percents listed reflect usage during sex.

5 Rose et al 2006. Late Night Breakfast Buffet Study. Percents listed reflect usage in last 3 months.

6 Colfax et al 2004. The EXPLORE Study. Percents listed reflect usage in last 6 months.

**Multiple partners.** Having more than one and overlapping/concurrent sexual partners is common among gay men and has been associated with increased risk for HIV, partly because of the greater chance of exposure given the high HIV prevalence in the community. Plankey et al (2007), in a study conducted in urban areas other than San Francisco, found that MSM reporting two or more male sex partners were at increased risk of HIV infection. (See the section on multiple partners, p. 123).

Gay and bisexual men without a main partner, according to one study, tended to have higher numbers of male sexual partners (Hoff et al 2006). Conversely, men in same-sex domestic partnerships have been found to have a lower prevalence of multiple partnerships and decreased HIV risk behaviors in one multi-city study (Klausner et al 2006).

**STIs.** STIs are important for two reasons: (1) their presence indicates that unprotected sex is occurring, which indicates a potential risk for HIV transmission if one partner is HIV-positive, and (2) they may increase the risk of HIV acquisition and transmission, especially if there are sores present. Gonorrhea is independently associated with HIV infection among MSM (Koblin et al 2006). (For more on gonorrhea's association with HIV transmission, see Section II: Drivers, p. 115).

**Mental health.** Mental health issues among gay men, especially isolation, loneliness, and low self-esteem, may lead to taking risks in sexual situations (Morin et al 2003), but research is mixed as to what extent mental health is linked to HIV risk (see the section on Mental Health, p. 130, for more information). Depression is higher among MSM than in the general population of men (Mills et al 2004). Issues such as childhood sexual abuse (Arreola et al 2008, Huebner et al 2004, Relf et al 2004), experiences of stigma and discrimination (Courtenay-Quirk et al 2006), and a need to cope with life stressors (Diaz et al 2005) have been linked to substance use and/or HIV risk.

Conversely, certain kinds of social support may help to alleviate or diminish the impact of mental health issues and lead to decreased HIV risk behaviors. One study of gay male couples found that couples with greater levels of HIV-specific social support engaged in less HIV risk behavior (Darbes & Lewis 2005).

**Stigma and discrimination.** Stigma and discrimination, including racism, classism, homophobia, transphobia (directed at gay-identified transmales, from both within and outside the gay male community), and HIV-related discrimination play a role in HIV risk. Stigma and discrimination have been associated with bartering sex (Swendeman et al 2006); anxiety, depression, and other mental health issues (Courtenay-Quirk 2006, Diaz et al 2004), and HIV risk behavior (Jarama et al 2005).

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Gay men of color and gay youth may be particularly vulnerable to discrimination and experiences of stigma. Gay men of color may experience discrimination both within the gay community as well as their communities of origin stemming from homophobia and lack of information about HIV. Studies among Latino MSM have documented that discrimination is prevalent and is predictive of engaging in "difficult" sexual situations (Diaz et al 2004) and HIV risk (Jarama et al 2005). In another study, younger MSM were more likely to report verbal harassment, discrimination, and violence, experiences which were associated with lower self-esteem and suicidal ideation (Huebner et al 2004).

**Gay identity.** Among the larger MSM population, MSM who identify as gay are generally at higher risk for HIV and STIs than bisexual and heterosexually identified MSM. For example, a theoretical model, when tested empirically among a probability sample of MSM, found a link between gay identity and HIV risk behavior (Relf et al 2004), although this study was not San Francisco-specific. Among MSM-IDU in one study, gay-identified men were two to three times as likely to be living with HIV compared with bisexual and heterosexual MSM-IDU (Kral et al 2005). Flores et al (2009) also found that participation in the gay community was associated with unprotected anal sex.

Within the community of gay-identified men, research is mixed on whether greater affiliation with and participation in the gay community has a protective effect or increases risk, depending on how gay community affiliation is defined and measured. At least two studies suggest affiliation and participation increases risk. In the first study, MSM with stronger gay community affiliation were 2.4 times more likely to be diagnosed with early syphilis in one study (Wong et al 2005). In the second study, gay men have indicated that they used methamphetamine and cocaine for reasons related to sexual enhancement, possibly to meet cultural expectations and norms of sexual prowess and sexual success in the gay community (Diaz et al 2005). This suggests that some gay community norms may contribute to an environment that increases risk behaviors.

**Being part of a high-prevalence/high risk sexual network.** Increasing evidence is emerging that sexual networks play a strong role in HIV transmission patterns. One key example is that of African American MSM who have long had a higher prevalence than MSM overall despite lower or comparable levels of risk behavior. A recent study found that African American MSM in San Francisco had higher rates of same-race partnerships and age mixing (i.e., sex with partners 10 or more years older) compared with other MSM (Berry et al 2007). Because HIV prevalence is so high both among African American MSM and older MSM, these sexual network patterns, according to the authors, could explain the higher HIV prevalence.

Another example is a study conducted in Brooklyn, NY among a high-risk sample of adults (Friedman et al 2008). Sexual network patterns were identified in which STI/HIV discordance and multiple partnerships were common among those adults in the network who attended group sex events. Furthermore, the network data showed that almost all members in the network reported sex with someone who had attended a group sex event, or sex with someone who had sex with a group sex event attendee. The authors concluded that these patterns might increase the larger network's vulnerability to HIV. These examples suggest a need for interventions that focus on using sexual networks to facilitate HIV prevention, instead of HIV risk.

**Internet use.** The use of the Internet for meeting sexual partners has been identified as an HIV risk factor. MSM who meet partners on line tend to have more partners, more STIs, and more unprotected anal sex (McKinnan et al 2007, Rebchook et al 2003). The latter finding was further supported in a study showing that HIV-negative MSM were more likely to engage in unprotected anal sex with serodiscordant partners met on the Internet compared with those met in bars and clubs (Berry et al 2008). Other non-San Francisco studies have resulted in various

findings. Some show links between Internet use and high-risk behavior, and have hypothesized that the increase in risk associated with meeting partners on the Internet is primarily due to the efficiency and ease of making a sexual connection (Rosser et al 2008). Others have found little or no difference in risk between MSM who meet partners online compared with other locations (Chiasson et al 2007, Mustanski 2007). In addition to the published literature, community experience suggests the possibility that the use of the Internet to make sexual connections helps create sexual networks. Finally, in an example of the role of the Internet in STI transmission, the beginning of the resurgence of syphilis among gay men in San Francisco was traced to a group of men who met their partners on the Internet (Klausner et al 2000).

Although the Internet allows unlimited opportunities for sexual encounters, it is also a venue where gay men can find social support and where safer sex messages can be disseminated (Rebchook et al 2003). MSM and others seeking sex on the Internet are more likely to access information about STIs online, compared with those without online partners (Reitmeijer et al 2003). Effective use of the Internet can contribute to promoting health and wellness among gay men, by providing information about issues ranging from the biology of HIV infection to the effects of drug use.

## What Are the HPPC's HIV Prevention Recommendations for Gay Men?

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

The HPPC supports a health and wellness approach in which HIV prevention, including HIV testing, is addressed in the context of gay men's health and positive sexuality. Therefore, HIV prevention programs for gay men must have strong linkages to health-related services, including mental health and substance use counseling and treatment, and STI testing and treatment. All such services should be provided in a culturally appropriate manner and be community-based and located where gay men of all backgrounds live and/or have fun. Finally, HIV prevention programs should focus more on community assets and resiliency, social support, and strengthening community and less on the negative consequences of HIV infection. Gay men need more than simple safer sex messages. Gay men need HIV prevention that speaks to what is going on in their lives and their community. The complex interactions of the many issues affecting gay men must be acknowledged and addressed.

In addition to traditional individual- and group-level behavioral interventions and HIV testing, more innovative approaches are needed, including reaching gay men through the Internet, sexual network models for HIV prevention, structural interventions, and substance use interventions.

## What Are the HIV Prevention Needs of Bisexual Men?

### Epidemiology

#### BISEXUAL MEN

Studies on gay and bisexual men frequently do not explore epidemiologic differences between these two groups, and therefore it is difficult to extract data specific to bisexual men. In general, data suggest that bisexual men have a lower HIV incidence than gay men. Bisexual male IDUs may be at higher risk for HIV transmission and acquisition, according to two studies (Bluthenthal et al 2001, Knight et al 2007), but another study found that HIV prevalence among bisexually identified male IDUs was lower than that among gay-identified IDUs (24% vs. 46%). (Kral et al 2005.)

## Behavior and Factors That Affect HIV Risk in San Francisco

Two main questions arise when thinking about the HIV prevention needs of bisexual men: (1) How are their needs different from those of gay men? and (2) How does having sex with both men and women affect new HIV infections among women?

Regarding the first question, data on gay and bisexual men is often not reported separately in San Francisco-based studies. Therefore, it is challenging to describe HIV risk among bisexual men specifically. The level and type of risk behavior and the cofactors that affect MSM appear to be relevant regardless of whether they identify as bisexual or gay, as illustrated in one study in which gay and bisexual male IDUs reported the same rates of anal sex (Kral et al 2005).

Bisexual men may be different demographically or experience cofactors differently than gay men. For example, the Seropositive Urban Men's Study (SUMS) found that men who have sex with men and women were more likely than men who had sex exclusively with men to be younger and African American, more likely to experience internalized homophobia, and less likely to participate in the gay community (O'Leary et al 2007). There were no differences in the venues at which they met sex partners, and these demographic and cofactor differences might not translate into differential risk. In another study, injection-drug-using men living with HIV who had sex with men and women were twice as likely as their gay and heterosexual counterparts to buy or sell sex for money, drugs, or housing, possibly conferring greater risk for HIV transmission (Knight et al 2007).

The answer to the second question is complicated: To what extent do bisexual men act as a bridge for HIV infection from MSM to women? Because the number of new infections is so low among women in San Francisco (estimated at 12 per year for women who do not inject drugs), it is reasonable to assume that women are not contracting HIV from anyone, including bisexual men, at high rates. Of those 12 new infections per year, however, at least a few may be attributable to sex with men who have sex with men and women. Knight et al (2007) found that injection-drug-using men living with HIV who had sex with men and women, even though they were no different than gay male IDUs in their reports of insertive anal sex with men, were in fact twice as likely to report unprotected vaginal sex and three times as likely to report unprotected anal sex with HIV-negative or unknown serostatus women than were their heterosexual male counterparts. Older studies conducted in the 1980s and 1990s suggest that unprotected sex does occur between women and bisexual men, but this does not appear to be having a large effect on HIV rates among women in San Francisco.

## What Are the HPPC's HIV Prevention Recommendations for Bisexual Men?

The HPPC believes that the approach to HIV prevention with bisexual men should be similar to that for gay men (see the section on Gay Men, p. 66), but interventions for bisexual men should address practicing safer sex with female as well as male partners.

## Who Are MSM Who Identify as Heterosexual?

### MEN WHO HAVE SEX WITH MEN WHO IDENTIFY AS HETEROSEXUAL

This population has been receiving increasing attention at the community level and in the media, both in San Francisco and nationally. A New York Times Magazine article published in 2003 (Denizet-Lewis 2003) called "Double Lives on the Down Low" received national attention for its in-depth look at the lives and sexual practices of MSM who are not openly gay, particularly African Americans. What little research has been done has been mixed on how large this population is and to what extent these individuals are at risk for acquiring or transmitting HIV.

A small exploratory needs assessment, which included Latino and African American MSM identifying as heterosexual (n=32 interviews) as well as their male partners who identify as gay/bisexual (four focus groups), provided some insight into characteristics of this population (Harder+Company 2004a). Interviews and focus groups revealed that this population is not homogeneous. Individuals do not share a community identity in the same way that many gay and

bisexual men do, although they might participate in the same sexual networks. Some of these men are married with children and have sex with men without the knowledge of their partners. Some of them have sex with men only out of economic need, in exchange for food, housing, or drugs. Some are upper middle class men from suburban areas. Others are living in poverty and marginally housed. Some of these men consider themselves heterosexual in all aspects of their lives, but others have a fluid perception of their sexual orientation depending on who they are with at any given time. The one common thread appears to be that, for most of these men, sex with other men is not something they disclose to others because it is inconsistent with their own view of themselves or with the norms and values of their families and communities.

Among MSM, there is some limited research conducted outside of San Francisco that reveals differences among racial/ethnic groups with regard to identity and sexual behaviors; however, it is not clear whether these findings are representative of San Francisco populations. Furthermore, the studies speak more to "non-gay" identity, which includes bisexual identity as well as heterosexual identity. In summary, the data seems to support the notion that most MSM, regardless of their race, identify as gay or bisexual (Montgomery et al 2003). However, African American and Latino MSM are less likely to identify as gay compared with other racial/ethnic groups (Flores et al 2009, Millet et al 2007, Montgomery et al 2003), and more likely to report also having sex with women (Montgomery et al 2003).

Finally, it should be noted that there appears to be a large concentration of MSM who identify as heterosexual seeking testing (and thus perhaps living) in the Tenderloin. Twenty-nine percent of tests conducted among this population at HPS-supported testing sites between 2004 and 2007 were among people reporting a Tenderloin/Civic Center zip code (HIV Prevention Section, special data request, January 2009).

## **What Are the HIV Prevention Needs of MSM Who Identify as Heterosexual?**

### **Epidemiology**

It is difficult to assess how HIV and AIDS affect this population because many men who identify as heterosexual might not disclose that they have sex with men and so they may not be represented in the data. HIV counseling and testing data from HPS-supported testing sites does include this group and can contribute to the understanding of this population, although it is not definitive because (1) it is not population-based data, and (2) it represents tests, where individuals who test multiple times are counted multiple times.

Between 2004 and 2007, 1,827 tests were conducted among men who reported heterosexual identity and sex with other men (2% of all testers). Exhibit 2 compares HIV positivity rates between MSM testers who identify as heterosexual vs. gay or bisexual. This data strongly suggests that heterosexual MSM are less likely to test HIV-positive; only 1% of heterosexual MSM tested positive (n=19), compared with 4% of gay or bisexual MSM (n=1,245).

Because there were only 19 positive tests, it is unclear whether there are any statistically meaningful differences in HIV positivity among heterosexual MSM by race/ethnicity.

**EXHIBIT 2 HIV Positivity Rate by Race/Ethnicity Among Testers:  
A Comparison Between MSM Who Identify As Heterosexual  
vs. Gay/Bisexual, 2004-2007**

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RACE/ETHNICITY	MSM IDENTIFYING AS HETEROSEXUAL (N=19)	MSM IDENTIFYING AS GAY/BISEXUAL (N=1,245)
African American	1%	8%
Asian and Pacific Islander	0%	3%
Latino	1%	5%
Native American	0%	4%
White	1%	3%
Other/Multiracial	2%	4%
Unknown	0.0%	4%
Overall HIV Positivity Rate	1.0%	4%

*Source: HIV Counseling and Testing Data, HIV Prevention Section, special data request, January 2009.*

*Note: This data is not population-based and is based on tests, not individuals, and thus is not necessarily representative of HIV prevalence or incidence in the larger population.*

## Behavior

Both researchers and community members have dialogued around the question of whether MSM who identify as heterosexual are at greater or lesser risk than gay-identified men. There has been much speculation in community circles that internalized homophobia and the need to have sex in secret could lead to taking greater risks during sexual encounters, such as using drugs and having unprotected sex. On the other hand, several studies have offered evidence that the more a person affiliates with the gay community (for more information, see the section on Gay Men under "Gay Identity," p. 69), the more at risk they are due to situational influences that do not always support safer sex, such as widespread methamphetamine use or assumptions about HIV status being made without actual discussion of status.

Though the question remains open, data focusing specifically on behavior seems to suggest that the prevalence of high-risk sexual behavior among MSM identifying as heterosexual is lower than that among gay or bisexual-identified men (Harder+Company 2004a, Millet et al 2005; Exhibit 3). However, certain cofactors might be more salient for this group. For example, substance use during sex was higher among heterosexual MSM testing for HIV (Exhibit 3), and in another study, MSM-IDU identifying as heterosexual were more likely than other MSM-IDU to be homeless and to trade sex for money or drugs.

Nevertheless, the findings related to sexual behavior call into question a popular theory that high rates of risk behavior among African American heterosexual MSM explain the high HIV prevalence among African American MSM nationally, as well as high rates of new infections among African American women nationally. Recent research explores other possible explanations for these health disparities (for more details, see the section on African Americans, p. 91).

## EXHIBIT 3

## A Comparison of Sexual and Drug Use Risk Behaviors Among MSM Testers Who Identify As Heterosexual vs. Gay/Bisexual, 2004-2007

BEHAVIOR (LIFETIME)	MSM IDENTIFYING AS HETEROSEXUAL (N=1,827)	MSM IDENTIFYING AS GAY/BISEXUAL (N=32,692)
Unprotected receptive anal sex	17%	41%
Unprotected insertive anal sex with men	28%	50%
Unprotected vaginal sex	59%	12%
Injected drugs	26%	6%
Used alcohol during sex	61%	55%
Used any drugs during sex	46%	31%

Source: HIV Counseling and Testing Data, HIV Prevention Section, special data request, January 2009.

## Factors That Affect HIV Risk in San Francisco

There is relatively little research on cofactors affecting HIV risk among this population. Low levels of knowledge, drug use, internalized homophobia, and sex work are four factors that might influence risk and are discussed below.

**Low levels of knowledge.** MSM who identify as heterosexual might have lower levels of HIV knowledge and lower perceptions of risk compared with gay men. For example, gay and bisexual male focus group participants who were asked to discuss their sexual experiences with their heterosexual male partners reported that many MSM identifying as heterosexual believe you cannot get HIV if you are a "top" (i.e., the insertive partner during anal sex). (Harder+Company 2004a.)

**Drug use.** In a local needs assessment (Harder+Company 2004a), drug use was identified as playing a substantial role in sexual relationships between heterosexual MSM and their male partners. According to participants, the prospect of getting high often provides the "excuse" for heterosexual men to meet up and have sex with other men. In addition, getting high before sex reduces inhibitions about having sex with men. Condoms are less likely to be used or discussed when drugs are involved. Finally, in some situations, the sex occurs as payment for drugs and is not the primary purpose of the encounter (Harder+Company 2004a).

**Internalized homophobia.** According to needs assessment participants (Harder+Company 2004a), sexual relationships and encounters between heterosexual MSM and their male partners often occur in a secretive "don't ask, don't tell" context, as many of these men live double lives due to internalized and community homophobia. This could influence communication about safer sex. Heterosexual men might avoid discussion of HIV because they consider it taboo (Harder+Company 2004a).

**Sex work.** For the subgroup of heterosexual MSM who engage in sex with men primarily for survival or to support addictions, the risk of trading sex for money, drugs, or housing may come into play. In one study, MSM-IDU in San Francisco who identify as heterosexual were more likely to be homeless and to trade sex for money or drugs than gay or bisexual MSM-IDU (Kral et al 2005).

## What Are the HPPC's HIV Prevention Recommendations for MSM Who Identify As Heterosexual?

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

HIV prevention for MSM who identify as heterosexual should address risk on at least two levels: (1) the individual level, and (2) the community and structural level. At the individual level, many of these men may need education, assistance, and support regarding engaging in safer sex with their male and female partners. They may also need psychosocial support to help them cope with internalized homophobia and the mental health consequences of leading a double life. At the community level, issues that contribute to situations that could put these men at higher risk, such as homophobia, drug use, and poverty, need to be addressed through structural or other interventions (see Chapter 4 Strategies and Interventions, pp. 195-197, for more on structural change).

The male partners of these men are perhaps best positioned to bring HIV prevention messages to this group at the individual level. Social marketing interventions could help reach these men with HIV prevention messages that depict the reality of these men's lives. Such campaigns should subtly acknowledge that these men have sex with both male and female partners, with a focus on behavior and not sexual identity, according to gay and bisexual men who have had heterosexual male partners (Harder+Company 2004a).

## What Are the HIV Prevention Needs of Transfemales?

### Epidemiology

#### TRANSFEMALES

It is estimated that transfemales have very high HIV prevalence and incidence rates in San Francisco – approximately 28% prevalence and 3.78%-6.01% incidence (higher for transfemales who are also IDUs) (McFarland 2007, see Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates). These high HIV rates are also found nationally among this population (Herbst et al 2008). Accurate estimates are challenging to develop because determining population size is difficult and because transfemales might sometimes be misclassified as MSM; however, careful surveillance and data collection on this population for over a decade in San Francisco have improved estimates over time.

Although HIV prevalence and incidence are high, the population of transfemales in San Francisco is relatively small, estimated at 1,883 (McFarland 2007). Therefore, the estimated number of new infections per year is 58, lower than for MSM or IDU populations (Exhibit 4). This is why the BRP that includes transfemale non-IDUs is ranked third, after the MSM and IDU BRP. Transfemale IDUs are included in the IDU BRP, which is ranked second. (See Chapter 3: Priority Setting, p. 156-157.) It should be noted that because of the small population size, estimates of HIV prevalence and incidence are less accurate than for other groups. Another limitation is that there are few trend data for transfemales, making it difficult to say whether new HIV infections are increasing, decreasing, or staying the same among this group.

African Americans appear to be the most profoundly affected racial/ethnic group among transfemales in San Francisco, as well as nationally (Herbst et al 2008). One local study found a 63% HIV prevalence among this population in 1997 (Clements-Nolle et al 2001); in 2000 another study found a 42% prevalence (Nemoto et al 2002); and in 2002 another found a 58% prevalence among transfemales living in San Francisco and Alameda counties (Rose et al 2002).

### Behavior

Behaviors contributing to the high rates of infection include both sexual and drug use risk behaviors, which are often related to social and economic hardships that result from discrimination against transfemales. Rates of unprotected receptive anal sex, the highest risk behavior for acquiring HIV, from four studies are presented in Exhibit 4.

**EXHIBIT 4 Rates of Unprotected Receptive Anal Sex Among Transfemales in Four Studies**

RATE OF UNPROTECTED SEX	ADDITIONAL INFORMATION	SOURCE
38%	Transfemales living with HIV, past 6 months	Clements-Nolle et al 2001
32%	HIV-negative transfemales, past 6 months	Clements-Nolle et al 2001
34%	African American transfemales living with HIV, past 6 months	Rose et al 2002
41%	HIV-negative African American transfemales, past 6 months	Rose et al 2002
24%	African American transfemales living with HIV, past 6 months, with a partner of unknown or different HIV status	Rose et al 2002
26%	HIV-negative African American transfemales, past 6 months, with a partner of unknown or different HIV status	Rose et al 2002
30%	With primary partners, past 12 months	SFDPH 2002 (HIV Testing Survey data)
7%	With non-primary partners, past 12 months	SFDPH 2002 (HIV Testing Survey data)
36%	With primary partners, past 30 days	Nemoto et al 2002
18%	With casual partners, past 30 days	Nemoto et al 2002
9%	With commercial sex partners, past 30 days	Nemoto et al 2002

Injection-related risk behaviors are also prevalent; 47% shared syringes in the prior six months in the (Clements-Nolle et al 2001) study. The most commonly injected drug in the prior six months in the (Rose et al 2002) study was speed (11%), followed by cocaine (6%) and heroin (4%). However, it appears that sharing of needles used to inject hormones is low, which is possibly a result of the availability of hormone needles at syringe access sites in San Francisco (Clements-Nolle et al 2001). Further, the risk of transmitting HIV through sharing of hormone needles may be lower because hormones are generally injected subcutaneously (under the skin), not intravenously (into the veins).

## Factors That Affect HIV Risk in San Francisco

For many transfemales, the issue of HIV is overshadowed by a whole host of other health and social issues – mental health, low self-esteem, lack of job opportunities – which often leads transfemales into sex work, lack of trans-specific and trans-sensitive community services, substance use, homelessness, stigma and discrimination, and sexual violence and victimization (Clements-Nolle et al 2001, Nemoto et al 2002, Rose et al 2002). It is critical that all agencies working with transfemales acknowledge and address these multiple issues and their synergistic effects.

Of these multiple factors, recent San Francisco-based research focuses primarily on elucidating the roles stigma and discrimination, sex work, and mental health in HIV risk, and these are discussed below. In addition, substance use cannot be ignored. (For more information, see the sections on Substance Use, pp. 126-129, Cocaine p. 116, Heavy Alcohol Use, p. 118, Methamphetamine, p. 119, and poppers, p. 120).

**Stigma and discrimination.** Stigma and discrimination are experienced profoundly in the trans community and operate at multiple levels. In addition to gender-based discrimination and transphobia, transfemales of color experience the added effects of the multiple stigmas associated with ethnicity and gender identity (Nemoto et al 2006). Discrimination has been strongly linked to

mental health issues in this community, including attempted suicide (Clements-Nolle et al 2006). Qualitative studies have found that discrimination contributes to a heightened need among transfemales to feel safe and loved by a male companion, which can make them vulnerable to engaging in unsafe sex to please their male partners (Melendez et al 2006, Nemoto et al 2004c). One study with transfemales of color did not find an independent association between exposure to transphobia and unprotected sex across the entire sample, but found that young transfemales who experienced higher levels of transphobia were significantly more likely than those experiencing lower levels to report unprotected receptive anal sex (Sugano et al 2006).

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**Sex work.** An international meta-analysis found that transfemale sex workers had the highest risk for HIV among all sex workers and among all transfemales (Operario et al 2008b). Factors that appear to be associated with engaging in sex work include substance use (Operario & Nemoto 2005). Various studies have identified factors associated with unprotected sex among transfemale sex workers, although the associations vary depending on the study population and partner type (primary, casual, or sex work):

- Low self esteem (Clements-Nolle et al 2008a);
- History of forced sex or rape (Clements-Nolle et al 2008a);
- Use of crack or other drugs (Clements-Nolle et al 2008a, Nemoto et al 2004c);
- Being a person living with HIV (Nemoto et al 2004b); and
- Having low income (Nemoto et al 2004b).

Qualitative studies elucidate the many complexities behind decisions to engage in sex work and high-risk behaviors. Sausa et al (2007) explore how social networks, cultural norms, immigration issues, and experiences of transphobia have an influence, and Nemoto et al (2004c) describe how unprotected sex can be an important part of a relationship with a sex worker's primary partner, because it signifies love and emotional connection.

Lack of job opportunities propels many transfemales into sex work and survival sex; lifetime rates of sex work among transfemales were 80% in one study (Clements-Nolle et al 2001). Poverty may be an incentive to accept more money for unprotected sex from sex work clients (Harder+Company 2004b). Further, sex work can expose individuals to violence and abuse. In the Rose et al (2002) study, 69% of African American transfemales reported they had been forced to have sex, and 59% reported forced sex in the Clements-Nolle et al (2001) study. (See also the section on Sex Work and Exchange Sex, p. 141).

**Mental health.** Mental health issues, such as low self-esteem, loneliness, and powerlessness are experienced throughout the trans community. The link between mental health issues and HIV risk is complex and is discussed in more detail in the section on Mental Health (p. 130). In one study, 40% of transfemales reported currently experiencing depression, and 29% had ever attempted suicide (Nemoto et al 2002), rates comparable to another study in which 32% of trans participants reported attempted suicide (Clements-Nolle et al 2006).

## What Are the HPPC's HIV Prevention Recommendations for Transfemales?

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

Trans-specific and trans-sensitive services are extremely important, especially in the Tenderloin. Because HIV prevention is not the main issue of concern for many transfemales, HIV prevention needs to be woven into other health and social services, such as medical care, mental health services, substance use treatment, and job training and placement services. Promotion of overall health and wellness for transfemales, of which HIV prevention is a part, needs to be the primary focus. This means that HIV prevention programs for transfemales can be implemented by all types of health and social services agencies, not just traditional HIV prevention agencies.

The service provider community needs to build its capacity to work with trans populations. Service providers need to be familiar with and sensitive to issues that are relevant for trans-males, including issues related to hormone use, gender reassignment surgery, and police harassment, as well as the factors described above (Clements et al 1999). Lack of provider sensitivity to the unique needs of the trans community is a barrier to HIV risk reduction (Clements et al 1999). Insensitivity among HIV prevention and health and social service providers can lead to hesitancy to disclose or discuss trans status, which can compromise care; it can also result in transfemales not accessing services at all. Linguistic and cultural factors also contribute to barriers to accessing HIV prevention and health services for this population (Clements et al 1999). There is a need for Spanish and Asian language services. Trans services are clearly needed in the Tenderloin, where a large population of transfemales lives and where most transfemales living with HIV and AIDS live.

## **What Are the HIV Prevention Needs of the Male Partners of Transfemales?**

### **Epidemiology**

#### **MALE PARTNERS OF TRANSFEMALES**

Very little is known about HIV prevalence or incidence among the male partners of transfemales, in San Francisco or elsewhere. A needs assessment conducted in 2001 found eight self-reported HIV-positive men (19%) among a sample of 43 male partners of transfemales (Coan et al 2005). In a study of Latino MSM, those who also reported sex with a trans partner were more likely to be living with HIV (Bockting et al 2007).

## **Behavior and Factors That Affect HIV Risk in San Francisco**

It is important to understand sexual and injection-related risk behaviors among the male partners of transfemales for two reasons: (1) such behaviors may put these men at risk for HIV, and (2) such behaviors might put their transfemale sexual partners at risk for HIV if they themselves are living with HIV.

Studies done in non-San Francisco locations have drawn the following conclusions about the male partners, based on accounts provided by transfemales:

- Transfemales report that their male partners are of all sexual orientations (Hooley 1996) but usually identify as heterosexual or bisexual (Bockting et al 1998, McGowan 2000). The clients of transfemale sex workers most frequently identify as heterosexual (Mason 1995).
- Men engage in both anal insertive and receptive intercourse with their transfemale partners, although insertive intercourse is more common (Boles & Elifson 1994, Hooley 2003, Weinberg et al 1999).
- The male partners of transfemales are stigmatized for their attraction to transpersons and are considered deviant, thus increasing the likelihood of secretive relationships and sexual encounters (Mason 1995, Perkins et al 1994).
- The male partners of transfemales yield the greatest power in the sexual relationship, because affirmation of identity and social status among peers for a transperson often depends on having relationship(s) or sexual encounter(s) with a man, thus creating a power imbalance (Mason 1995, Perkins et al 1994).
- In general, men who have romantic or primary relationships with transfemales are not connected to prevention or other community support networks. Those who are connected to the service system do not feel that existing HIV prevention education meets their needs (McGowan 2000).

- Men who are clients of transfemale sex workers, who are often married men, actively pursue unsafe sex practices, using offers of increased financial compensation for performing unsafe sex. These men are very difficult to reach with prevention messages (McGowan 2000).

More recently, some studies have been conducted with the male partners as subjects, as opposed to gathering information about them solely through their transfemale partners. These studies corroborate earlier inquiries that found male partners of transfemales to be of all sexual orientations and ethnic and socioeconomic backgrounds (Coan et al 2005, Operario et al 2008a).

In terms of behaviors, an exploratory needs assessment conducted in 2001 in San Francisco (Coan et al 2005) found that 74% of the 43 men surveyed reported sex with male and/or female partners in the prior six months, in addition to their transfemale partners. Reported rates of unprotected sex were high, regardless of the gender of their partner. This finding raises concerns about bridges for HIV transmission (e.g., a man acquiring HIV from a transfemale partner and then transmitting it to his female partner; a man acquiring HIV from a male partner and then transmitting it to his transfemale partner). However, none of the men surveyed reported unprotected receptive anal sex with a transfemale partner, the highest risk behavior for acquiring HIV sexually.

In the study of Latino MSM (Bockting et al 2007), the men who also reported sex with a trans partner were nearly three times as likely to report unprotected sex in the prior three months, were more likely to identify as bisexual or heterosexual, and were more likely to also report sex with non-transfemales. The authors concluded that these men are more likely to act as a bridge for infection *to* the trans community, as opposed to acting as a bridge for infection *from* transfemales to their male and female sex partners.

In terms of injection among this group, little is known. About one quarter (23%) of the sample in the Coan et al (2005) needs assessment had injected drugs in the prior three months, but none reported sharing needles.

Because research with this population is very limited, information about cofactors and issues that affect HIV risk among this group is largely absent. Drug use may be an important cofactor for the male partners of transfemales. In the Coan et al (2005) needs assessment, alcohol, marijuana, and crack or cocaine were the most common drugs reported, and it is known that heavy alcohol use and crack are linked to increased HIV risk. Another possible cofactor is sexual compulsivity. Latino MSM reporting a history of sex with a trans partner were more likely to have sexual compulsivity issues and were at greater risk for HIV and STIs (Bockting et al 2007).

## **What Are the HPPC's HIV Prevention Recommendations for the Male Partners of Transfemales?**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

The best prevention for the male partners of transfemales might be effective prevention with transfemales. According to transfemale needs assessment participants (Coan et al 2005), transfemales should be involved in all prevention efforts for their male partners and can themselves provide the needed education. Sex with transfemales might not be readily disclosed to a service provider, so reaching these men through their sexual partners may be the only way to bring prevention to them. It is noteworthy that male partners of transfemales are highly likely to also have sex with men and/or women and to be of all sexual orientations; thus, they may also be reached through programs designed for high-risk populations, such as MSM.

# What Are the HIV Prevention Needs of Transmales?

## Epidemiology

### TRANSMALES

No reliable estimates exist for the size of the transmale population in San Francisco. In the late 1990s, it was believed to be about one-third the size of the transfemale population based on enrollment rates of transpersons for one study (Clements-Nolle et al 2001). Since then, the estimated number of transfemales in San Francisco has greatly fluctuated, and it is unclear if or how this would affect estimates of transmale population size.

Epidemiologic data on HIV among transmales in San Francisco is sparse. Furthermore, transmales at risk for or living with HIV may be accessing testing and other services without disclosing their trans status, which makes it difficult to ensure the accuracy of the data that does exist. Studies among this population in San Francisco have found a prevalence of 1.6% among transmales overall (Clements-Nolle et al 2001) and 2% (Sevelius et al 2008), and 3% (Thompson et al 2009) among transmales who have sex with males. An international meta-analysis of five studies conducted with transmales also found low HIV prevalence (Herbst et al 2008). Through December 2008, fewer than five transmales have been diagnosed with HIV/AIDS in San Francisco (special data request, HIV Epidemiology Section, April 2009).

## Behavior

There are only a few behavioral studies with San Francisco's transmale population, so this section is supplemented with studies conducted in other locales, including other countries.

The primary behavioral risks for transmales are sex with men (particularly with gay and bisexual men, among whom HIV prevalence is high), injection of illicit drugs, and possibly hormone injection. In a local study called the Transmale Rapid Assessment Project (RAP), 64% of the 47 transmales interviewed reported sex with men and 45% with multiple male partners (Thompson et al 2009). Data on levels of risk behavior among transmales reveals a mixed picture. One Chicago-based study found that transmales were significantly less likely than transfemales to have used protection during their last sexual encounter and significantly more likely to have engaged in recent high-risk sexual activity (Kenagy & Hsieh 2005). This study has been criticized by Adams et al (2008) for overstating the risk, however, because the authors included unprotected oral-genital sex (vaginal and penile) and oral-anal sex in the definition of high-risk, even though these behaviors are not high risk for HIV transmission. In a San Francisco-based study, rates of unprotected frontal (vaginal) and anal sex with males and transpersons were greater than 50%, but the number of participants engaging in these behaviors was low (fewer than 10 people) due to small sample size (Clements-Nolle et al 2001).

The local Transmale RAP study, which used a small (n=47) convenience-based sample, concluded that the primary behavioral risk among transmale participants was frontal sex with multiple high-risk male partners (Thompson et al 2009). (Frontal sex is more traditionally referred to as vaginal sex, but the term "vagina" is not often used among transmen due to its strong association with female bodies and female sex traits.) In this study, rates of unprotected anal and frontal sex were 11% and 34%, respectively. It should be noted that frontal sex between a transman and a male partner might have biological transmission risks that are different than vaginal sex between a man and a woman. For example, the frontal region may undergo physiological changes with testosterone therapy that may make it more susceptible to HIV transmission than the female vagina (Thompson et al 2009). Studies are needed to assess how testosterone affects the frontal region and how this could affect biological risk for HIV transmission compared with anal sex.

Sharing needles to inject hormones may also put transmales at risk. In the largest North American study conducted with transmales, 67% reported using testosterone, although it is unclear what percentage were injecting it (Newfield et al 2006). In a San Francisco-based study, sharing needles was more prevalent among transmales than transfemales (Clements et al 1999).

## Factors That Affect HIV Risk in San Francisco

Many of the issues that apply to transfemales also apply to transmales, such as discrimination, since individuals with any trans identity are often marginalized (see the section on Transfemales, p. 75). In recent years as more literature has emerged on HIV risk among transmales, several cofactors specific to this group have been explored. The six most discussed are discrimination, mental health, lack of knowledge about HIV, identity affirmation, challenges negotiating safer sex, and lack of transmale-sensitive services (discussed below). Many of these issues could be addressed not only by working with transmales, but also with the MSM partners of TMSM. Partners might categorically assume that sex with a transmale is not high-risk, and such beliefs have an influence on the sexual decisions that are made.

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**Mental health.** One predominantly U.S.-based study found diminished quality of life scores among transmales, particularly with regard to mental health (Newfield et al 2006). It is noteworthy that individuals receiving testosterone reported significantly higher quality of life scores, and the Transmale RAP study supports the finding that transmales report improved self-esteem since transitioning, although high rates of depression appear to persist (Thompson et al 2009). In another study, 55% of the transmale participants reported being depressed (Clements-Nolle et al 2001). Social isolation due to the invisibility of this population is prevalent (Thompson et al 2009). Low self-esteem, fear of rejection by gay male partners, and substance use which might be used to cope with such feelings may also prevent transmales from adopting safe behaviors (Namaste 1999, Thompson et al 2009).

**Lack of HIV-related knowledge.** Many transmales do not consider themselves to be at risk for HIV and might have incomplete knowledge about how HIV is or is not transmitted (Adams et al 2008, Namaste 1999). Kenagy (2002) found that transmales have significantly lower levels of HIV-related knowledge compared with transfemales. This lack of knowledge may stem from the fact that many transmales, in their former identities as lesbians or dykes, were not exposed to HIV prevention messages due to the virtually nonexistent risk of sexual transmission from woman to woman (Adams et al 2008). The RAP study found that transmale participants do have sound general HIV prevention knowledge, but a low perception of risk (Thompson et al 2009). Finally, for transmales who have sex with other transmales, there is a lack of information about the risks (Adams et al 2008).

**Identity affirmation.** Like with transfemales, gay-identified transmales might seek to have sex with non-transmales in order to affirm their identities. This can create situations that are unsupportive of safer sex; for example, forgoing condoms in order to please their male partners (Adams et al 2008). Anecdotally, unprotected sex in particular might also be identity-affirming for transmales who have sex with males; not using condoms while on testosterone avoids associations with contraception, which could be associated with heterosexual female identity. In addition, there may be a perception among transmales that high-risk sex is "what gay men do."

**Challenges negotiating safer sex.** Many transmales who have sex with males find it difficult to negotiate safer sex with non-trans men, in part due to lack of language to describe transmale bodies and lack of knowledge about which activities are more or less risky than others. Power in relationships also plays a role, in that transmales may feel uncomfortable insisting on condom use because of the risk of rejection from a male partner (Adams et al 2008). Transmale community members report anecdotally that transmales trying to fit into the gay community may feel lucky to have willing male partners in an atmosphere that feels sexually charged and highly focused on bodies, and they may be willing to take more risks in trying to affirm their gay identity. Many transmales cruise online because it represents a safe way to disclose trans status and negotiate safer sex before meeting in person (Thompson et al 2009).

**Lack of transmale-sensitive services.** In addition, health care and social service providers are often ill-equipped to meet the needs of transmales, as they generally have little or no knowledge about this population and lack the language and context for effective com-

munication to occur (Green & Ratchlin 2001, Namaste 1999, Thompson et al 2009). Even if they were equipped, challenges related to insurance and access to care are as relevant for transmales as they are for other San Franciscans (Thompson et al 2009). Anecdotally, transmales in San Francisco often seek services at MSM programs, and many go stealth (i.e., not disclose trans status) in these spaces for fear of discrimination. Transmale community members in San Francisco have reported experiences of discrimination ranging from organizations not having the infrastructure or training to address transmale needs, to organizations that make it known that transmen are not welcome in gay male spaces (HPPC meeting, March 2009). This issue is particularly complex when transmales attempt to access gynecological services.

## **What Are the HPPC's HIV Prevention Recommendations for Transmales?**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

In general, HIV prevention should focus on reaching the primary transmale subpopulations at risk for HIV – transmales who have sex with males and transmales who inject drugs. Transmales are in need of safe community spaces where their identities are respected and their unique needs recognized. In addition, programs serving gay and bisexual men should develop the capacity to be more trans-inclusive and trans-sensitive in order to best serve the community of transmales who have sex with men. Programs should seek input from transmales about what type of HIV prevention and other services they want and need. In addition, for transmale IDUs, access to hormone needle exchange is important.

Outreach and education to communities and providers about the needs of transmales can help to reduce the invisibility of this population (Thompson et al 2009), which can have a profound effect on the factors related to HIV risk. This should include raising awareness of transmales within the gay male community, as well as educating HIV, health, and social service providers.

## **Recommendations from the Transmale Rapid Assessment Project (RAP): An HPPC-Prioritized Study**

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In 2007, the HPPC prioritized conducting additional research among transmales to get a better understanding of their HIV prevention needs. The study was conducted in 2008 by Thompson et al and presented to the HPPC in 2009. A copy of the report can be found at <http://sfhiv.org/> or contact the HIV Prevention Section for a copy. A community-based participatory research approach was utilized to design and conduct 47 surveys, 3 focus groups, and 10 key informant interviews. The sample was convenience-based. Three workshops/town halls were held to give community members and stakeholders an opportunity to interact with, analyze, and discuss preliminary data and findings in order to provide feedback and insights around recommendations and next steps. The following recommendations were developed out of this process:

### **1. Integrate TMSM and MSTM HIV prevention, counseling, and testing protocols into MSM programs. This could be accomplished through a variety of efforts including:**

- Establishing a community advisory group to support prevention efforts for TMSM;
- Delivering cultural competency training to providers;
- Developing a common language that can help providers and clients discuss their bodies, sex, sex work and sexual behavior with each other;
- Adapting HIV prevention interventions to openly address TMSM within MSM HIV prevention interventions; and
- Implementing new cost-effective interventions such as an online community listserv for TMSM and MSM to discuss issues around sex, sexual health, and social events.

### **2. Address the data and epidemiology conundrum with more research and trials around HIV and STI testing of transmales. Activities could include:**

- Collaborating with the Transgender Center of Excellence to develop ways to ensure that transmales are “counted” in epidemiologic data; and
- Conducting a larger study with transmales to better understand HIV risks, mental health, depression, substance use, low self-esteem, and histories of violence.

### **3. Increase social support for transmales, especially youth aged 18 to 25, through more coordination, collaboration, and training across city departments. Possible approaches include:**

- Increase access to trans-friendly mental health and substance use providers (e.g., through offering coverage under Healthy San Francisco);
- Consider coverage of trans-related surgeries under Healthy San Francisco to improve self-esteem and quality of life for transmales and reduce HIV risks taken to save money for surgeries (e.g., sex work);
- Increase linkages to GED programs and City College;
- Increase job-training programs;
- Increase mechanisms for informal and formal peer mentoring; and
- Increase safe and affordable housing options.

## What Are the HIV Prevention Needs of Women

### Epidemiology

#### WOMEN

The epidemiologic profile among women in San Francisco is very different from the national profile. To illustrate how different the San Francisco profile is compared with the U.S., nationally, approximately 27% of new infections each year are among women (MMWR 2008), but in San Francisco the estimate is 3%. Evidence suggests that the primary HIV risk for women in San Francisco is injection drug use, followed by sex with men.

It is estimated that 30 new HIV infections occur per year among women in San Francisco, with 18 of those among women who inject drugs (McFarland 2007; see Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates). Compared with MSM, women make up only a small fraction of PLWHA (6%). However, women of color are disproportionately affected – 70% of women living with HIV/AIDS are women of color, and 44% are African American.

Data on perinatal infections is also relevant when describing the epidemiology of HIV among women. San Francisco has a comprehensive HIV screening program for pregnant women. Since 1996, San Francisco has had only 10 perinatal HIV infections (SFDPH 2007).

### Behavior

When considering the behaviors that put women at risk for HIV in San Francisco, it is important to remember that behavior alone does not necessarily indicate the level of HIV risk within a population. If a woman is not exposed to HIV (i.e., she does not have sex or needle sharing partners who are living with HIV), she cannot get HIV no matter how high-risk her behaviors are. Because HIV prevalence is extremely low among heterosexual men in San Francisco, heterosexual women here are unlikely to be exposed to HIV through sex. Nevertheless, behavioral interventions for women are still relevant, because if there were a shift in the epidemic that led to women being exposed to HIV more often, the protective behaviors need to be in place. Supporting HIV protective behaviors among women can also have positive effects in other areas, such as preventing unwanted teen pregnancy, hepatitis, and STIs.

The main risk factors for women in San Francisco who do not inject drugs are unprotected sex with high-risk male partners, including those living with HIV, IDU, and MSM partners (van der Straten et al 2000, Johnson et al 2003). Women may not be aware that they are at risk if they do not have full knowledge of their partners' sex or drug use behaviors. One recent study with African American and Latina women and their male partners lends credibility to this theory (Chen et al 2009b). In this study, the men were asked about their behaviors and the women were also asked about the men's behaviors, and the researchers assessed to what extent the women's knowledge was concordant with the men's reports. In general, the women did not have an accurate perception of their partners' risks. For example, only 14% of the women correctly indicated that their male partners had a history of sex with men, and among women who believed their partners were monogamous, 52% of their male partners reported that they had other sex partners.

As with other populations, sexual orientation and behavior do not always match among women. High-risk sexual behaviors with men have been documented not only among heterosexual women, but also bisexual and lesbian women (Scheer et al 2003, Stevens & Hall 2001). In one study, women who reported sex with both men and women had higher rates of high-risk sex compared with women who had sex exclusively with men, including sex with men living with HIV, sex with MSM or IDUs, trading sex for drugs or money, and anal sex (Scheer et al 2002).

Among women who inject drugs, sharing of injection equipment represents a risk factor in addition to sexual risk. Young women with injection partners who are also sexual partners were at greater risk in one study (Evans et al 2003), but women who reported having a steady sex partner who injected drugs were at lower risk in another study (Kral et al 2001). Young female IDUs may be at greater risk than either their male counterparts (Evans et al 2003) or older female IDUs (Kral et al 2001).

Young women engage in unprotected sex as well, as indicated by data on teen birth and STI rates, although new HIV infections among this population are rare. Nevertheless, the HPPC believes that promoting self-esteem, sexual health, and safer sex among young women can support them in making healthy decisions throughout their lives.

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## Factors That Affect HIV Risk in San Francisco

The main cofactors that can increase HIV risk for women in San Francisco include sex work, having an STI, drug use (non-IDU), and sexual/physical abuse. These cofactors are discussed in more depth in the following paragraphs.

**Sex work.** Sex work/trading sex is a significant risk factor for women (Jones et al 1998, Kral et al 2001), especially for IDUs, bisexual, and lesbian women. Among women who inject drugs, engaging in sex work carries with it a higher risk of needle sharing (Kral et al 1995) and a five-fold increased risk for acquiring HIV (Kral et al 2001). Recent counseling and testing data also supports these findings, although the data is biased toward people who seek testing. Among testers, female sex workers (both IDU and non-IDU) were more likely to test HIV-positive than non-sex workers, although this relationship is not necessarily causal and may be mediated by other factors such as drug use (HIV Prevention Section, special data request, January 2009). Bisexual and lesbian women were more likely than heterosexual women to have a history of trading sex for money or drugs in one study (Scheer et al 2003). Finally, sex work is also associated with other cofactors, including drug use, STIs, high number of sex partners, poverty, a history of sexual abuse, low self-esteem, and mental illness (Cohan et al 2005).

Some examples of how sex work interacts with other cofactors to increase risk are described here. Some sex workers may agree to have unprotected sex with clients who have offered them considerably more money, due to economic need. Others may use condoms with their clients but not their main partner. Immigrant Asian and Pacific Islander women who engage in sex work in massage parlors may be a high-risk population among those working off-street, since many of these women may be coerced into sex work under the threat of deportation. They might also fear contact with the police and/or Immigration and Naturalization Service, lack HIV and STI information, and have insufficient access to culturally and linguistically appropriate prevention services. The illegal status of sex work makes effective HIV prevention outreach a challenge for this population.

A recent large study that included interviews with more than 2,500 low-income women in Northern California is worth noting because it looked at not only HIV risk behaviors but also at HIV seropositivity (Cohan et al 2005). While the authors found higher rates of risk factors among sex workers vs. non-sex workers (including use of drugs before sex, higher number of lifetime partners, sex with high-risk partners, and history of certain STIs), sex workers were no more likely to be living with HIV than non-sex workers. (See also the section on Sex Work and Exchange Sex, p. 141.)

**STIs.** Presence of an STI may increase the risk of acquiring HIV. In San Francisco, among women, African American women have the highest rates of chlamydia, gonorrhea, and syphilis, particularly those 14 to 20 years old. (See also the section on STIs, p. 132.)

**Drug use.** Use of drugs, such as crack, cocaine, and alcohol may lead to sexual risk-taking among women. (Please contact the HIV Prevention Section for the full discussion and supporting references by the HPPC in 2001.) Sex workers were more likely than non-sex workers to use drugs before sex in one study of low income women in Northern California (Cohan et al 2005). Bisexual and lesbian women have higher rates of lifetime and recent drug and alcohol use compared with heterosexual women (Scheer et al 2003).

**Sexual/physical abuse.** A history of sexual or physical abuse might influence sexual risk for HIV. Having been abused is associated with acquiring an STI, using alcohol or other drugs before sex, having a non-monogamous main partner, exchanging sex for money or drugs, having unprotected sex, and having multiple partners (Bauer et al 2002, NIMH Multisite HIV Prevention Trial Group 2001, Parillo et al 2001). A Los Angeles study found that women living with HIV (African American, Latina, and White) were more likely to have experienced a more severe history of trauma, including childhood sexual abuse and relationship violence compared with HIV-negative women (Wyatt et al 2002). African American women in abusive relationships may be a particularly high-risk group. One study found that they were less likely to use condoms than other racial/ethnic groups and more likely to experience abuse or the threat of abuse when they used condoms (Wingood & DiClemente 1997). Bisexual and lesbian women are also at risk; they were more likely to have a history of forced sex compared with heterosexual women (Scheer et al 2003).

Although difficult to prove, the HPPC believes that underlying many of these issues are the more fundamental social injustices of poverty and gender inequities that can affect how a woman exercises her power both generally and in potentially high-risk situations.

## What Are the HPPC's HIV Prevention Recommendations for Women?

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

Because the vast majority of women in San Francisco are not considered to be at risk for HIV, HIV prevention programs must focus on the highest risk women (see Chapter 3: Priority Setting, pp. 156-157 under BRP 2 and 4) and must take into account the cofactors that affect them. Particular attention should be paid to the cultural competency of interventions, as most women at risk are women of color. A focus on empowerment and community is needed to promote the self-esteem and social support needed for healthy behavior.

Linkages to appropriate services, including drug treatment, mental health, and primary health care are important facets of programs for women. HIV prevention can also be woven into other services for women, through collaborations and structural change interventions; HIV prevention for women does not necessarily need to be in the form of a stand-alone program.

When resources permit, it is important to reach females when they are young and in the process of forming their beliefs and practices regarding sex, love, and drugs, since prevention at this age can help set young girls on a course to a lifetime of healthy behaviors.

## What Are the HIV Prevention Needs of Heterosexual Men?

### Epidemiology

#### HETEROSEXUAL MEN

In the history of the HIV/AIDS epidemic in San Francisco, a total of 116 men whose only reported risk for HIV was sex with women have been diagnosed with AIDS. This represents less than 1% of the more than 28,000 AIDS cases diagnosed through the end of 2008 (SFDPH 2008e). This compares with a national percentage of approximately 6.7% as of the end of 2006 (<http://www.cdc.gov/hiv/topics/surveillance/basic.htm#exposure>). Furthermore, in a special targeted HIV testing study of heterosexuals living in San Francisco census tracts with historically high levels of AIDS cases and the lowest income levels, no heterosexual non-IDU men living with HIV were found (SFDPH 2007).

In San Francisco, it is estimated that only five new infections occur each year among San Francisco non-IDU men who have sex exclusively with women (McFarland 2007; see Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates). Thus they are the lowest priority for funding (see Chapter 3: Priority Setting, p. 150-168). This low infection rate is primarily due to the low prevalence of HIV among women in San Francisco.

Overall, the low infection rates among heterosexuals in San Francisco are believed to be largely attributable to early availability of syringe access (needle exchange), which helped keep infection rates low and stable among IDU populations, which in turn had a protective effect for their non-IDU sexual partners. Nevertheless, sex with a female IDU partner remains the primary risk factor for heterosexual non-IDU men in San Francisco. African American and White men account for most of the heterosexual non-IDU male AIDS cases (31% and 27%, respectively; SFDPH 2007).

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Heterosexual men who inject drugs are at higher risk than those who do not, due to needle sharing behaviors and perhaps a greater likelihood of having sexual networks that include IDUs, and thus have higher HIV prevalence. It is estimated that 31 new infections per year occur among this group (McFarland 2007; see Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates). The number of heterosexual male IDUs living with HIV has remained stable from 2004 to 2008 (SFDPH 2008e), as have HIV incidence rates (McFarland 2007). As with non-IDUs, African Americans and Whites bear the highest burden compared with other racial/ethnic groups, making up 49% and 37%, respectively, of all heterosexual male IDU AIDS cases diagnosed through 2008 (SFDPH 2008e).

## Behavior

Unprotected sex is prevalent among heterosexual men in San Francisco, as reported by behavioral studies, such as a recent probability-based study in which heterosexual males reported that 67% of their vaginal and 89% of their anal sex contacts with women were unprotected (Raymond 2007). STI rates are also a marker of unprotected sex, and STI rates are high among some subgroups of heterosexual men, including African Americans and young men (see the sections on Gonorrhea p. 121 and other STIs p. 132). For the reasons cited earlier, however, unprotected sex among this group is less likely to lead to acquiring HIV compared with other populations. Of concern are rates of potentially serodiscordant unprotected sex among heterosexual men living with HIV, because this could lead to new infections among women.

Needle sharing rates among heterosexual male IDUs may be 30% or higher (Kral et al 2003), indicating a need for continued HIV prevention efforts with this population.

## Factors That Affect HIV Risk in San Francisco

Men in sexual relationships with women who inject drugs are more likely to be exposed to HIV. These men might be more likely to be low-income, inject drugs themselves, and experience many of the other cofactors that are related to poverty (e.g., incarceration, drug use, STIs). These cofactors all work together to put these men at higher risk; however, the risk is mediated by the protective factors mentioned earlier – the physiological and epidemiologic factors that make them less likely to be exposed to or acquire HIV.

## What Are the HPPC's HIV Prevention Recommendations for Heterosexual Men?

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

The primary strategy for eliminating new infections in this group, and for preventing the transmission of infection to their female partners among men living with HIV, is making counseling and testing, partner services, and prevention with positives available and accessible. It would likely not be cost-effective to implement a program exclusively for these men. Any program that reaches men who identify as heterosexual should explore the individual's specific risk behaviors, as sex with men may in fact be a risk factor (see the section on MSM Who Identify as Heterosexual, p. 71).

## What Are the HIV Prevention Needs of Injection Drug Users?

### Epidemiology

Overall, HIV incidence declined three-fold among IDUs between the late 1980s and late 1990s (Kral et al 2003), largely due to clean syringes made widely available in the form of syringe access (formerly called needle exchange). The fact that non-MSM IDUs in San Francisco make up approximately 7% of new HIV infections (McFarland 2007; see Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates) compared with 12% nationally (MMWR 2008) is evidence of the successful local strategy. National vs. local data for MSM-IDU shows the inverse trend; new infections among MSM-IDU are estimated at 8% of all new infections, compared with 4% nationally (MMWR 2008). The high rate of new infections among San Francisco's MSM-IDU populations are believed by many researchers and community members to be largely due to sexual risk, and this is supported in at least one study conducted with IDUs in general (Kral et al 2001). Because the MSM IDUs and the non-MSM-IDU populations are so different, these groups are considered separately below.

**MSM-IDU.** The majority of the estimated 144 annual new HIV infections among IDUs occur among MSM who inject drugs (55%) (McFarland 2007). (See Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates.) Local studies support that MSM injectors are the IDU population most affected, in terms of both prevalence and incidence (Bluthenthal et al 2001, Kellogg et al 2001, Kral et al 2005, Shafer et al 2002). Although the estimated HIV incidence rate for MSM-IDU decreased from 4.6% to 2.58% between 2001 and 2006, MSM injectors are second only to transfemales in terms of the incidence rate and second only to MSM non-injectors in terms of the number of new infections per year.

**Female, transfemale, and non-MSM male IDUs.** Among this group, there are 65 estimated new infections per year, distributed as follows: non-MSM males (48%), women (28%), and transfemales (25%) (McFarland 2007). (See Chapter 1: Epidemiologic Profile, p. 37, for complete HIV Consensus Estimates.) Between 2001 and 2006, HIV incidence remained relatively low and even decreased slightly in these groups.

African Americans are disproportionately represented among non-MSM IDUs living with HIV and AIDS, although some evidence suggests that African American IDUs might have lower rates of sexual/injection risk behaviors and new infections compared with other racial/ethnic groups (Bluthenthal et al 2007, Kral et al 2003). This may be because African American IDUs were reached with HIV prevention messages early in the epidemic, due to the high HIV prevalence, and thus made behavior changes (A. Kral, personal communication, 2003).

### Behavior

New HIV infections among IDUs in San Francisco can most likely be attributed to both unsafe sexual behaviors and needle-sharing. High-risk sexual and injection behaviors overlap to increase a person's risk for HIV, because use of drugs while high elevates the risk of unsafe sex. Therefore, HIV prevention for IDUs must address both types of risk and how they are related.

**Sexual behaviors.** For MSM who inject drugs, high-risk sex is likely responsible for a greater number of new infections than is syringe sharing. Several studies have documented high levels of sexual risk among MSM injectors (Knight et al 2007, Kral et al 2005, Shafer et al 2002). Many of the reasons for high levels of sexual risk behavior among this population are likely to be similar to those of MSM who do not inject drugs (see sections on Gay Men, p. 66, and Bisexual Men, p. 70).

Among IDU populations other than MSM, it is less clear whether sexual risk behavior or needle-sharing is the driving force contributing to new infections. Nevertheless, high-risk sexual behaviors have been documented in these populations. The HIV Testing Survey found high rates of unprotected vaginal and anal sex among male IDUs who have sex only with women and among female IDUs, (SFDPH 2002), although HIV incidence is believed to be relatively stable and low among these groups (McFarland 2007, see Chapter 1: Epidemiologic Profile, p. 37, for complete 2006 HIV Consensus Estimates). Even with this encouraging news, the need for continued prevention messages that address sexual risk among IDUs is clear.

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Little data on sexual behavior is available specific to trans IDUs because most studies focus on transpersons overall, not just IDUs. (See also the sections on Transfemales, p. 75, and Transmales, p. 80).

**Injection-related behaviors.** While syringe access programs in San Francisco have made an invaluable contribution to minimizing syringe sharing in the IDU community, sharing still occurs. Reducing syringe sharing is important, not only because of the risk of HIV transmission, but also because of the risks of skin infections, viral hepatitis transmission, and other injection-related comorbidities.

Recent studies suggest that needle-sharing practices continue at rates as high as 30-40% among MSM injectors (Kral et al 2003, Kral et al 2005), and another study among a late night MSM crowd found needle-sharing rates of 58% (Pendo et al 2003). Needle sharing appears to be more prevalent among MSM-IDU compared with other IDUs (Kral et al 2005), although sharing also continues among other IDUs. Young injectors, particular females, appear to be more likely than others to have both needle-sharing and sexual risk for HIV (Evans et al 2003, Kral et al 2003, Lum et al 2005), although older injectors have higher HIV prevalence. It is not clear from these studies to what extent syringe sharing occurs between individuals of the same vs. different HIV status.

Needle-sharing rates are also high among transfemales. In one study, of those who injected in the last six months, 47% had shared syringes (Clements-Nolle et al 2001). Among transmales in this study, only five reported non-hormonal injection drug use, but of those, four reported sharing syringes and other injection equipment (Clements-Nolle et al 2001). Although hormone injection was also common among transpersons in this study, sharing of hormone needles was rare due to availability of hormone needles from clinics and syringe access sites (Clements-Nolle et al 2001). Furthermore, the risk of transmitting HIV through sharing of hormone needles is lower because hormones are injected subcutaneously (under the skin), not intravenously (into the veins).

## Factors That Affect HIV Risk in San Francisco

A number of factors are relevant for IDUs, and which are more salient might be different by gender or other factors. These include sex work, homelessness, having a sexual partner who is also an IDU partner, incarceration, and mental health (discussed below). In addition, the issue of substance use for this population cannot be ignored; see pp. 126-129 for more information

**Sex work.** Sex work/trading sex is an important cofactor for certain groups of IDUs. For example, MSM/F-IDUs were more likely than either MSM or MSF injectors to engage in sex work in one study (Knight et al 2007). The interplay between drug addiction and sex work is also particularly salient for trans populations (Clements et al 1999). Trans IDUs who are sex workers may share needles with customers who are willing to pay more for shooting up together (Nemoto et al 1999). Among female IDUs, those involved in the sex trade were live times more likely to seroconvert compared with those not trading sex (Kral et al 2001).

**Homelessness.** Another noteworthy cofactor with links to HIV among IDUs is homelessness. In one study among female IDUs, syringe sharers were more likely to be homeless (Lum et al 2005). Less recent studies have also found links between homelessness and HIV among other IDU populations (for a more in-depth discussion of this issue and references, see p. 76 of the 2004 San Francisco HIV Prevention Plan). Injection of crack/cocaine was found to be a barrier to obtaining housing for IDUs living with HIV in a 4-city study (Mizuno et al 2009).

**Having a sexual partner who is also an IDU partner.** Having a partner who is both a sexual partner and an IDU partner has been associated with syringe sharing in two studies with female injectors (Evans et al 2003, Lum et al 2005).

**Incarceration.** Incarceration may be another important cofactor, given that prison policies restrict access to clean syringes, making it difficult for prisoners who inject drugs to use clean needles consistently (for more information contact the HIV Prevention Section for committee work completed in 2001. Grinstad et al 2001).

**Mental health.** A study by Latkin et al (2008) conducted in four U.S. cities highlighted associations between psychological distress and syringe sharing among HIV-positive IDUs.

Additional HIV risk factors relevant for IDUs, such as methamphetamine, crack/cocaine, and STIs are discussed in detail in other sections (methamphetamine on p. 119, crack/cocaine on p. 116, and STIs on pp. 121 and 132).

Finally, the literature has also identified some factors that are perhaps protective against sharing. One study among IDUs living with HIV found that peer norms supporting safer injection practices and having primary HIV medical care visits in the prior 6 months were associated with reports of no syringe sharing (Latkin et al 2008).

## What Are the HPPC's HIV Prevention Recommendations for Injection Drug Users?

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

Syringe access is an essential component of HIV prevention for IDUs, and continued access to this service is critical. In addition, effective HIV prevention for IDUs needs to address both sexual and injection-related risks in the context of the multiple drivers and cofactors that affect IDUs. Prevention efforts need to include the sexual and injection partners of IDUs because they are also at risk for acquiring or transmitting HIV. HIV prevention should be linked with health services for IDUs, in an effort to promote overall health and wellness. Late night services for IDUs are also needed.

Not all IDUs have the same needs, and prevention efforts should be culturally appropriate and designed to meet the specific needs of different groups of IDUs. For example, among gay IDUs, some injectors may identify more with the gay community, whereas others may identify more with their drug-using social networks. Prevention messages need to be developed and targeted appropriately.

Finally, the HPPC supports the development of a safer injection facility in San Francisco (see Chapter 4: Strategies and Interventions, pp. 170-279 for more information). Evaluations of Insite, a supervised injection site in Vancouver, BC, Canada, have found that Insite increases the uptake into treatment, reduces injection-related litter in the community, and attracts the highest risk users who are most vulnerable to HIV (see <http://vch.ca/sis/research.htm> for a summary of the literature). Most relevant to HIV prevention is a study that found that use of Insite was independently associated with decreased syringe sharing (Kerr et al 2005). The feasibility, acceptability, and efficacy of such a facility in San Francisco is unknown at this time; further research is needed.

## What Are the HIV Prevention Needs of African American People?

### Epidemiology

Epidemiologic data shows that African Americans are disproportionately affected by HIV and AIDS in San Francisco. African Americans represent 6% of the San Francisco population, but they make up 14% of PLWHA (SFDPH 2008e). This disparity is particularly evident among women; African American women make up 45% of the 1,160 women diagnosed with AIDS through 2008 (SFDPH 2008e). In addition, HIV prevalence is disproportionately high in some African American populations; among African American MSM and transfemales, HIV prevalence is higher than for any other racial/ethnic group. Studies have found HIV prevalence rates of 25-40% for African American MSM (25% in Raymond 2009, 32% in McFarland 2007, 36% in NHBS 2008, and 40% in Schwarcz et al 2007) and 33-63% for African American transfemales (Clements-Nolle et al 2001, Rose et al 2002, SFDPH 2001).

The national trend – where nearly half of new HIV infections occur among African Americans (46%, MMWR 2008) – is not paralleled locally, however. Although local estimates of the number of new infections by race/ethnicity are unreliable, trends in surveillance data suggest that African Americans make up far fewer than 50% of the new infections. Between 2004 and 2008, African Americans represented between 14% and 17% of the new HIV diagnoses in San Francisco (SFDPH 2008e). Despite this tentative evidence, overall, trends in new infections are difficult to assess. Most trend data in San Francisco among African Americans focuses on MSM, but the trends have not been tracked long enough to make any reliable assessments about whether new HIV infections are increasing, decreasing, or staying the same in this group. More longitudinal studies and analyses are needed to monitor changes over time.

Compared with other racial/ethnic groups in San Francisco, there is a higher proportion of African American PLWHA whose primary risk for HIV was injection drug use. Nevertheless, as with all racial/ethnic groups, MSM remains the primary mode of transmission.

What is clear is that HIV prevalence is persistently higher among African American MSM compared with other racial/ethnic groups. Studies have found HIV prevalence rates ranging from 25% (NHBS 2008) to 40% (Schwarz et al 2007). An examination of local data from several sources (Berry et al 2007) concluded that African American MSM in San Francisco actually have *lower* reported risks than other groups, so this does not explain the higher prevalence. This assessment found that African American MSM, however, are more likely to be unaware they are living with HIV and have lower rates of antiretroviral use, which can lead to greater infectiousness. These findings, coupled with other data showing that African American MSM are 3.2 times more likely to partner with other African American men than would be expected by chance, and that African American men are more likely than other men to partner with someone at least 10 years older (HIV prevalence is higher in older age groups), might explain the persistently higher prevalence among this group (Berry et al 2007).

### Behavior

Most literature on HIV risk behavior among African Americans focuses on MSM. African American MSM in San Francisco, as mentioned earlier, appear to have fewer behavioral HIV risks than other MSM, including rates of unprotected anal sex, number of partners, and potentially serodiscordant anal sex (Berry et al 2007), despite a higher HIV prevalence. Particular subgroups of African American MSM may be at greater risk. For example, one study with African American MSM living in the poorest neighborhoods in San Francisco found high rates of unprotected anal sex, particularly with primary partners compared with casual partners (Crosby et al 2000). In

addition, 25% reported unprotected anal sex with a partner of serodiscordant or unknown HIV status (Crosby et al 2000).

African American women in San Francisco, like women of other races, are primarily at risk for HIV from injection drug use, and secondarily, through sex with men who inject drugs and/or have sex with other men. African American transfemales who inject drugs represent a larger proportion of HIV/AIDS cases compared with those at risk only through sex. African American transfemales also report high levels of risk behavior, including unprotected receptive anal sex in the last six months (37%; Rose et al 2002). (See also the section on Transfemales, p. 75.)

Needle sharing remains a risk factor for African American IDUs; however, limited evidence suggests that sharing rates might be lower than for other racial/ethnic groups (Bluthenthal et al 2007, Kral et al 2003). A recent study with IDUs shed some new perspective on the specific risks of African American IDUs. The study looked at community-level factors such as race and income and their associations with both sexual and IDU risk behavior (Bluthenthal et al 2007). This study found that in census tracts where a higher percentage of African Americans live, there tended to be *lower* rates of receptive and distributive syringe sharing (as well as *lower* rates of unprotected sex). This study corroborates other evidence suggesting that HIV incidence among African American IDUs might be the lowest of all racial ethnic groups (Kral et al 2003).

## Factors That Affect HIV Risk in San Francisco

African Americans are disproportionately affected by many of the cofactors traditionally associated with greater risk for HIV. Not all of these cofactors, however, appear to be associated with higher rates of HIV in African American communities. Cofactors that have stronger links to HIV risk include discrimination, lack of knowledge of HIV status, drug-sex exchange, and lack of information about HIV. Cofactors that were once believed to be associated with increased HIV risk, but which recent research now call into question, include incarceration and heterosexual identity among MSM. Finally, STIs are prevalent among African Americans, but have not substantially contributed to new HIV infections among non-MSM African Americans. All of these are discussed in more detail below. In addition, as with most populations, the issue of substance use cannot be ignored; see pp. 126-129 for more information.

**Discrimination, homophobia, and racism.** Discrimination is perhaps the most important cofactor to understand when designing and implementing programs for African Americans. The effects of discrimination are far-reaching in this community and affect people as individuals and collectively; for example, it has effects on access to health care, access to education and employment opportunities, and the presence of violence, substance use and environmental hazards in communities. Discrimination has also resulted in profound disparities in health status, where African Americans have more health issues and suffer greater consequences from them than most other groups, and HIV is one of these health problems. Thus, discrimination has had an enormous influence on how HIV prevention is delivered in these communities.

One example of how a history of discrimination has resulted in structural and community-level HIV-related disparities for African Americans in San Francisco can be found in data on anti-retroviral therapy (ART) use among those living with HIV. Overall, ART use among African Americans with AIDS is high (estimated at 84-88%) but still slightly lower than for all people living with AIDS (estimated at 88-92%; SFDPH 2008e). The disparity is much clearer when looking at people living with HIV/non-AIDS who are eligible for ART. Overall, 70% of ART-eligible patients received ART, but only 61% of African American patients received ART (SFDPH 2008e). Reasons for lower ART usage likely range from individual-level factors, such as distrust of the health care system, to structural factors such as lack of access to health care – both of which are effects of societal and institutional racism. The consequences of this disparity in ART use are profound. Not only does lower use of ART result in lower survival, but people living with HIV not using ART may be more infectious, which could lead to new infections, particularly among the sexual networks of African Americans. Lower ART use has been posited as one reason for the persistently high HIV prevalence among African American MSM despite lower levels of individual risk behavior (Berry et al 2007).

Homophobia and racism also impact HIV risk among African Americans. Bayview/Hunter's Point community leaders participating in interviews in one study identified lack of acknowledgment and discussion about men having sex with men in San Francisco's African American communities as a barrier to effective HIV prevention (Harder+Company 2004c). Such barriers exist at the community level as well as at the individual level (e.g., internalized homophobia). Furthermore, African American MSM may feel marginalized within the larger gay community, and power dynamics in sexual relationships between African American men and men of other races may affect sexual decision-making and partnering, and thus HIV risk. An example of how racism might influence sexual partnerships can be found in a study among MSM in which API, Latino, and White men all reported the belief that African American sexual partners were least preferred and the most risky (Raymond 2009).

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**Lack of knowledge of HIV status.** Lack of or delayed knowledge of HIV status is another critical cofactor, which could be a function of lack of access to health care in general and HIV testing in particular. Although African American MSM have similar rates of lifetime and recent testing, studies indicate that the rates of unknown infection in this group are substantially higher compared with other racial/ethnic groups. In one study, more than half (57%) of African American MSM tested did not know they were living with HIV, compared with 39% of Latinos and 13% of Whites (McFarland 2008).

**Sex-drug exchange.** High rates of drug addiction and risk behaviors, such as sharing needles, having sex while using drugs, or exchanging sex for money or drugs are other important cofactors that are associated with high rates of unemployment and poverty within African American communities. A study among poor and disenfranchised African American MSM found high rates of substance use, psychosocial problems related to their substance use, and strong linkages between sex and drug exchange and sexual risk for HIV (Crosby et al 2000, Williams et al 2000). Among a group of Los Angeles MSM identifying as heterosexual, a history of injection drug use and speed use were associated with HIV infection (Wohl et al 2002).

**Lack of information about HIV.** Misperceptions about HIV and AIDS may be a contributing factor to high-risk behavior among some African Americans. For example, in a Tenderloin-based study, 50% of participating African American MSM did not know that receptive anal sex is higher risk for acquiring HIV than insertive anal sex (Crosby et al 2000). In an assessment conducted in Bayview/Hunter's Point, 60% of men and women surveyed incorrectly believed there was a cure for AIDS (Harder+Company 2004c).

**STIs.** Presence of an STI increases the risk of acquiring HIV. There are essentially two STI epidemics in San Francisco, one among MSM and one among young African Americans living in the Southeast corridor. Among MSM in general, including African Americans, gonorrhea continues to drive the HIV epidemic (see section on Gonorrhea, p. 121, for supporting evidence). Among African American non-MSM, women, and youth, however, the picture is different. It is true that these groups have the highest rates of chlamydia and gonorrhea, but the STI epidemic in these populations does not appear to be contributing substantially to increases in HIV at the population level, probably because HIV is not prevalent in the sexual networks of these groups. Nevertheless, STIs are clearly a cofactor because they do increase the risk of transmission during sexual encounters between HIV serodiscordant individuals.

**Incarceration.** African American men are extremely disproportionately affected by incarceration in San Francisco, both in jails and San Quentin prison. For example, in a one day snapshot in 2008, African Americans made up 58% of the jail population (see Exhibit 22 in the section on Incarceration, p. 137), but only 6.6% of San Franciscans are African American. This greatly affects San Francisco's Bayview/Hunter's Point community because many of the city's African American men who live here are incarcerated and experience recidivism. The link between incarceration and HIV risk is not entirely clear (see section on Incarceration, p. 135). It is difficult to determine causal relationships when the factors that put men at risk for incarcera-

tion – namely, drug possession, sale, and use – are themselves associated with needle sharing, sex trade, and other HIV risk factors. The HOPE study, a study conducted with incarcerated individuals living with HIV (53% of whom were African American) actually showed high levels of risk behaviors pre-incarceration, a substantial decrease immediately after release, with a gradual return to higher levels (Clements-Nolle et al 2005). This finding suggests jail might actually serve as a point of intervention and support, rather than directly causing increased risk.

**Heterosexual identity among MSM.** Although most African American MSM identify as gay, a higher proportion identify as bisexual or heterosexual compared with other racial/ethnic groups, according to a meta-analysis of 53 U.S. studies (Millett et al 2007). In the early 2000s, a great deal of national attention was focused on men, particularly African American men, who led heterosexual lives but had sex with men in secret. It was suggested that this phenomenon was contributing to the HIV epidemic, both in African American men and their female partners. Recent local and national behavioral research seems to suggest that the prevalence of high-risk behavior among MSM identifying as heterosexual is lower than that among gay or bisexual identified men (Harder+Company 2004a, Millet et al 2005). The HIV positivity rate is also higher among African American MSM testers who are gay and bisexual identified vs. heterosexually identified in San Francisco (see Exhibit 2 on p. 73). (See also the section on MSM Who Identify as Heterosexual, p. 71.)

## **What Are the HPPC's HIV Prevention Recommendations for African American People?**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

HIV messages, services, and programs for African Americans need to focus primarily on the groups most at risk – African American MSM and IDUs. Behavioral and psychosocial interventions and support are critical but must be accompanied by or embedded in structural approaches aimed at addressing poverty, lack of educational and job opportunities, lack of access to health care, and the other macro-environmental factors that create the context for the disproportionate burden of HIV in African American communities. Interventions also need to address the profound effects of stigma, discrimination, homophobia, and transphobia. HIV prevention messages and services must be culturally appropriate and relevant and ensure linkages to other relevant services. HIV prevention can be stand-alone or integrated into other services, such as primary care, mental health, substance use, and STI services.

In addition, innovative and creative approaches are needed to respond to the newly generated knowledge about high rates of HIV infection among African American MSM. This group needs access to HIV testing to increase HIV status awareness. Some possible ways to increase access include integrating HIV testing into medical settings or creating a “one stop shop” for African American MSM where they can get assistance with a range of health and social service needs. Sexual network interventions have the potential to result in long-term changes in HIV prevalence and incidence. Behavioral and psychosocial interventions should build on community strengths and provide resiliency skills, peer support, and practical support (e.g., substance use treatment, employment referrals). (See also the findings from the African American MSM Action Plan, a special HPS project, on the next page.)

# **Recommendations from the African American MSM Action Plan: An HIV Prevention Section Special Project**

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In January 2007, in recognition of the disproportionate effects of HIV on African American MSM, the California State Office of AIDS called on local health jurisdictions to create action plans to adequately address the HIV prevention needs of this group. In response, the HIV Prevention Section and the HIV Prevention Planning Council convened a group of African American MSM and their allies to review data regarding HIV/AIDS, STIs, late testing, and substance use; look at resources and service gaps; and make recommendations for how best to address the needs of this population. The group has been meeting monthly since March 2007 and continues to meet as of early 2009. The final plan was approved by the HPPC in February 2009. The full plan, available sometime in 2009/10 can be accessed at <http://sfhiv.org/> or contact the HIV Prevention Section for a copy.

The plan's mission was to develop recommendations for promoting and preserving the overall health and well being of all African American gay men and MSM in the City of San Francisco. The plan aims to reduce HIV and STI transmission through specific recommendations for development of comprehensive structural and behavioral interventions. These interventions should empower African American men, increase and sustain community support for individuals, assist in the development of social support networks, and reduce morbidity and mortality of HIV and STIs. The specific recommendations from the plan are as follows:

## **1. To address high HIV prevalence sexual networks and neighborhoods:**

- Focus public education, testing and care services in high prevalence networks and neighborhoods (e.g., the Tenderloin).
- Explore the creation of a Black MSM "Center" in the Tenderloin and expand existing, culturally competent support services.
- Ensure provision of treatment and care to all Black MSM living with HIV in the Tenderloin.
- Ensure that all homeless and marginally-housed Black MSM living with HIV in the Tenderloin are housed and receive wrap around support services, and advocate for related reforms (e.g., quality of single room occupancy [SRO] hotels).

## **2. To address isolation and other psychosocial challenges:**

- Support the launch and expansion of social outlets for Black MSM.
- Increase Black MSM access to group support and counseling, and to relevant substance abuse support.

## **3. To address group-level stigma:**

- Create anti-stigma initiatives focused in the LGBT community, and in the Black community, respectively, and help build provider cultural competency.
- Monitor (end) racial profiling of Black men in the Tenderloin, Castro and elsewhere, and develop programs that strengthen coping skills.

## **4. To address macro-environmental factors, such as health care access, housing instability, poverty, and incarceration:**

- Explore creation of a Black MSM "Center" (see recommendation #1).
- Increase availability of quality, low and moderate income housing for Black MSM living with HIV and others and support community improvement efforts.
- Support new mechanisms for development of a Black MSM advocacy agenda.

# What Are the HIV Prevention Needs of Asian and Pacific Islander People?

## Epidemiology

### ASIAN AND PACIFIC ISLANDER PEOPLE

Epidemiologic data show that, overall, Asian and Pacific Islanders (APIs) have fewer HIV and AIDS cases than would be expected given the size of the population in San Francisco. APIs represent 31% of the San Francisco population, but they make up only 5% of PLWHA (SFDPH 2008e). However, some subgroups of APIs are at higher risk, especially MSM. Male API AIDS cases tend to be more concentrated among MSM and less concentrated among MSM-IDU and IDU compared with other racial/ethnic groups. Additionally, APIs are the only racial/ethnic group in which more female AIDS cases are attributable to heterosexual contact than to injection drug use (45% vs. 30%), although the overall numbers are small (a total of 69 API females diagnosed with AIDS through 2008; SFDPH 2008e). HIV/AIDS prevalence and incidence among APIs in San Francisco is similar to the national profile.

HIV prevalence estimates among API MSM range from as low as 2.6% among young API MSM (Choi et al 2004, Do et al 2005) to 2-17% among API MSM overall (2% in NHBS 2008, 7% in Raymond 2009, 9% in Catania et al 2001, 10% in McFarland 2007, and 17% in Schwarcz et al 2007). One study found increases in unprotected anal sex and STIs among API MSM that actually surpassed levels among White MSM between 1999 and 2002 (McFarland et al 2004), but these trends seem to have reversed since that time (Raymond et al 2007, McFarland 2008), and anticipated increases in the rate of new HIV diagnoses have not yet occurred (SFDPH 2007).

What explains the persistently lower HIV prevalence among API MSM compared with other racial/ethnic groups? Due to issues of immigration status, cultural values of privacy and self-silencing, and other factors, some API MSM might escape the radar of conventional epidemiologic data, and HIV prevalence could be higher than studies show. Nevertheless, the data that is available show a consistently lower HIV prevalence among this group. This success is worth understanding, because it could help identify HIV prevention strategies that are effective for API MSM as well as other MSM.

One examination of local data from a variety of sources posited that there are four possible reasons (McFarland 2008) for the lower prevalence, but further data is needed to draw any definitive conclusions. The four hypotheses are as follows (McFarland 2008). First, API MSM tend to participate in lower risk sexual networks. They are 1.5 times more likely to partner with another API man than would be expected by chance, and they are more likely to partner with men in their own age group. These lower rates of race and age mixing result in less contact between high and low prevalence populations, reducing the chances for HIV transmission. Second, after 2001, API MSM have high levels of awareness of being HIV-positive. A 2004 study found no unrecognized HIV infections among API MSM, and only 12% who had never tested for HIV, a reduction since 2001. Third, APIs living with HIV overall have the highest ART use of any racial/ethnic group, at 94%, which helps reduce infectiousness. Finally, after a 3- to 4-year period of documented increases in unprotected anal sex, after 2001, these rates decreased substantially to pre-1999 levels.

## Behavior

Unprotected sex with men is the primary behavior that puts API men at risk for HIV. Among API women, the primary mode of HIV transmission is through heterosexual contact. Injection drug use is also a risk factor for APIs, but HIV surveillance data shows that sexual transmission is the primary route of HIV infection.

Most literature on HIV risk behavior among APIs focuses on MSM. Several studies were conducted with API MSM between 1999 and 2002, the time during which HIV risk behaviors were increasing (as discussed in the previous section). These studies showed high reported rates of recent unprotected anal sex, substance use, and other risk behaviors (Choi et al 2005, McFarland et al 2004, Operario et al 2006). More recent data that tracks trends from 1999 to 2005 shows a reversal of many of these trends beginning in 2003, including reductions in

early syphilis diagnoses, unprotected serodiscordant anal sex, and multiple partners, as well as increases in lifetime rates of HIV testing (Raymond et al 2007). These changes have been attributed to the strong prevention response that resulted from the 1999 to 2002 reports indicating increasing risk (Raymond et al 2007).

There is also some limited literature specific to API transfemales. One study with this group found that one-fifth of the sample had engaged in unprotected receptive anal sex with a male partner in the prior 30 days, and this behavior was found to be associated with commercial sex work and previous attempted suicide (Operario Nemoto 2005).

The literature on HIV risk behaviors among API women in San Francisco is sparse and focuses primarily on sex workers in massage parlors (see section on Exchange Sex and Sex Work, p. 141, for more information).

## Factors That Affect HIV Risk in San Francisco

In San Francisco, the API community is made up of diverse cultures and ethnic groups, including immigrants and people who are U.S.-born. Cofactors may be more or less prevalent or relevant depending on the API subgroup. Overall, the four main cofactors discussed in the literature are discrimination (including racism and homophobia), immigration and language, sex work, and substance use. Other cofactors, such as low perception of risk and lack of knowledge of HIV status, appear to be less relevant now than they were in the late 1990s/early 2000s based on more recent studies showing an increase in risk perception and knowledge of HIV status (McFarland 2008).

**Discrimination, racism, homophobia.** According to Nemoto et al (2003b), APIs often experience dual stigma stemming from homophobia and racism. Effects of this include discomfort with sexuality, power dynamics, and stereotypes that influence sexual partnerships with White men. In addition, discrimination can impact a person's freedom to "out" oneself to one's social network and family, and ultimately can undermine a person's sense of agency about their decision-making.

HIV-related discrimination might also play a role in HIV risk. For example, a study in San Francisco suggests that sexuality, sexual behavior, and HIV are extremely stigmatized within the larger Filipino community and that certain Catholic beliefs underlie the tension among Filipino families regarding these topics (Operario 2003). (Data on other API subgroups is sparse.) A New York City study found high levels of psychological distress among HIV-positive APIs resulting from having experienced the effects of stigma, including social rejection (Kang et al 2006). These effects were more pronounced for undocumented compared with documented APIs.

A recent local randomized, community-based study offers a different perspective on this issue. This study found that, based on data from 103 API MSM reporting on nearly 300 sexual partnerships, API MSM were at no higher risk than any other racial/ethnic group for having unprotected receptive anal sex with White partners. Furthermore, condom use rates among API MSM with White and other-race partners were similar to those for other groups of MSM (Raymond & McFarland 2008).

**Immigration and language.** Immigration status and language barriers can make it difficult to access health care and social services, adding another obstacle for APIs seeking HIV prevention-related information and support, as well as HIV testing (which, additionally, may "out" them because of the association some make between HIV testing and being gay). Anecdotally, some may fear testing because they believe that it will affect their right to citizenship or to reside in the U.S. Researchers and health care providers report a growing need for translators and services for immigrants who speak Asian languages (Snyder et al 2000). Being undocumented, as is often the case with API massage parlor workers (Nemoto et al 2004a), can make people vulnerable to exploitation and violence, since they might be less likely to report victimization to the police for fear of deportation (See also the section on Immigration and Language, p. 139.)

**Sex work.** Sex work is another cofactor that may place some APIs at risk for HIV, in particular, Asian immigrant women working at massage parlors in San Francisco. One San Francisco study among 100 masseuses found that difficult work conditions (i.e., multiple sex customers each workday, long working hours, physical and verbal abuse from customers) contributed to participants' HIV risk (Nemoto et al 2004a). In addition, in the absence of clear policies about condom use at these establishments, male clients often use condoms as a negotiation point, putting economically disadvantaged women in the position of having to choose between their health and more money (Nemoto et al 2004a).

**Substance use.** Substance use among API MSM and transfemales is not uncommon and increases HIV risk. (For more information, see the sections on Substance Use, pp. 126-129, Cocaine, 116, Heavy Alcohol Use, p. 118, Methamphetamine, p. 119, and poppers, p. 120.) In one study of API transfemales, over half reported sex while under the influence of substances, and substance use was associated with engaging in commercial sex work (Operario & Nemoto 2005). Choi et al (2005) found moderate rates of alcohol and drug use in connection with sex among a sample of young API MSM, including ecstasy (19%), marijuana (14%), poppers (11%), and methamphetamine (10%), although no association was found between being high during sex and having unprotected anal sex.

### Low perception of risk and lack of knowledge of HIV

**status.** Older studies conducted in the late 1990s/early 2000s show that API MSM, despite being the API population most at risk for HIV, have a low perception of risk and thus are less likely to seek HIV testing and more likely to have undiagnosed HIV infection (McFarland 2008). More recent data suggests that perceptions in this community have shifted, and rates of unrecognized HIV infection among API MSM have decreased (McFarland 2008).

## What Are the HPPC's HIV Prevention Recommendations for Asian and Pacific Islander People?

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

Linguistically accessible and culturally appropriate prevention interventions are needed in the API community, and they should be focused on the highest risk populations – MSM and transfemales. In addition, interventions should take into account differences that may exist among different API ethnic groups, as well as documented vs. undocumented immigrants. Now that HIV risk behaviors are on a downward trend among API MSM, programs should build upon these successes by supporting and reinforcing the effective behavior changes that API MSM have made in recent years and continue to promote HIV testing. As with other groups, it is important that HIV prevention service providers maintain collaborations and linkages with other health and social service agencies (e.g., mental health, substance use) in order to support clients with various needs.

## What Are the HIV Prevention Needs of Latino/Latina People?

### Epidemiology

Epidemiologic data suggests that Latinos in San Francisco are affected by HIV and AIDS at rates similar to their proportional makeup in the San Francisco population. Latinos represent 14% of the San Francisco population and make up 15% of PLWHA (SFDPH 2008e). Among Latinos in San Francisco, most AIDS cases are among MSM and MSM-IDU (91%). Among Latinas, injection drug users represent the highest percentage of cases (46%), followed by heterosexual non-IDUs (39%). Most Latina transfemales were infected through sex (55%). (SFDPH 2007.) Latinos represent the second highest number of PLWHA in San Francisco (SFDPH 2008e).

HIV prevalence is of most concern among Latino MSM and transfemales. Among MSM, prevalence estimates range from 19% to 29% (19% in Catania et al 2001, 22% in Raymond 2009, 23% in McFarland 2008, 24% in NHBS 2008, and 29% in Schwarz et al 2007). HIV prevalence is also high among Latina transfemales (29% in one study, Clements-Nolle et al 2001). In a study that included both Latino/a gay/bisexual men and transfemales, prevalence was 35% (Ramirez-Valles et al 2008).

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Trends in new infections are difficult to assess. Most trend data in San Francisco among Latinos focuses on MSM, but the trends have not been tracked long enough to make any reliable assessments about whether new HIV infections are increasing, decreasing, or staying the same in this group. More longitudinal studies and analyses are needed to monitor changes over time.

## Behavior

Latino MSM report rates of unprotected anal sex similar to those for other racial/ethnic groups. In one study, 19% of Latino MSM living with HIV reported unprotected insertive anal sex with HIV-negative or unknown status partners (Schwarz et al 2007). One-fourth of Latino/a gay/bisexual men and transfemales in one study reported unprotected anal sex in the prior 12 months (25% receptive and 27% insertive; Ramirez-Valles et al 2008). Data from the Trayectos Study conducted in San Diego revealed that about half of gay and bisexual Latino participants were consistent condom users, and among those who were not, there was considerable variation in their behaviors, with some choosing not to use condoms only in occasional instances and others unable to maintain regular condom use (Carrillo et al 2008). Less recent studies document high rates of unprotected anal sex among Latino MSM (for a full discussion with supporting references, see p. 87 of the 2004 San Francisco HIV Prevention Plan).

## Factors That Affect HIV Risk in San Francisco

The Latino population in San Francisco is diverse. Some individuals are U.S.-born, whereas others have immigrated here. Among immigrants, some have been in the U.S. for a long time, and others have been here for only a few months or years. Latino immigrants are also diverse in terms of country of origin and generation. Therefore, there is not one single HIV prevention approach that will work with all Latinos.

Despite this diversity, Latinos are affected by some common experiences that may increase their vulnerability to HIV, although not all of them have proven links to increased HIV risk in this population. These potential cofactors include discrimination and stigma, cultural context, immigration and acculturation, language barriers, and substance use.

**Discrimination and stigma.** Discrimination and stigma regarding homosexuality and HIV can lead to low levels of knowledge and increased potential for high-risk behavior to occur. In a study of Latino migrant workers in San Francisco, there was a high degree of HIV-related stigma among the sample and corresponding high levels of misinformation about HIV and HIV transmission (Kral et al 2006). Among a sample of Latino gay men in three U.S. cities, men who reported more instances of discrimination, including homophobia, had higher levels of psychological distress and were more likely to encounter “difficult” sexual situations (Diaz et al 2004). Studies in other U.S. locales echo these findings (Jarama et al 2005).

**Cultural context.** Certain cultural factors can influence HIV risk among Latinos, both negatively and positively, including sexual silence, familismo, and machismo (Marin 2003, Organista et al 2004). In many Latino communities, open discussion of sex and sexuality is not accepted. Such norms may inhibit the negotiation of condom use before sex, lest it be interpreted as a sign of infidelity (Hirsch et al 2002). Communication between parents and their children regarding sex and condoms may be affected by sexual silence as well. A study among Latinas showed poor communication about sex between mothers and daughters, low sexual comfort and knowledge about human sexuality, inaccurate perceptions of HIV risk, and poor HIV risk reduction skills (Gomez et al 2002). Machismo may also be associated with increased HIV risk, at both the individual and community levels. Latino MSM who adhere to or believe in traditional gender roles, of which machismo may be a part, may be less likely to acknowledge that they have sex with men. In contrast to factors that

increase HIV risk, *familismo*, which means being committed to the family, can be a great motivation for Latino men to have safer sex (Lescano et al 2009, Ryan et al 2009).

**Immigration, acculturation, and language.** Immigration and acculturation also influence the degree to which Latinos are at risk for HIV. Acculturation, which in this case is the extent to which Latino immigrants have adopted the U.S./San Francisco culture, has also been shown to influence risk. However, the research is mixed as to whether acculturation increases HIV risk or protects against HIV (CAPS 2002). A recent study showed that HIV prevalence among Latino gay and bisexual men in San Francisco was higher among U.S.-born residents than among those born outside the country (Ramirez-Valles et al 2008). In addition to the effects of acculturation, Latino immigrants face many challenges that affect HIV risk, such as poverty, lack of employment, various educational levels, and migrant labor conditions (Organista et al 2004). Further, non-citizen Latinos may encounter barriers to accessing and receiving health-related services, including HIV testing and other HIV prevention services due to fear of deportation, policies that require mandatory HIV testing for immigrants, and discrimination (CAPS 2002). Some Latino immigrants may come here without their spouses or families. Feelings of loneliness and isolation, combined with poverty and lack of access to employment, can create situations where unsafe sex is more likely to happen. Latino immigrants are also less likely to have access to HIV prevention services because of language or educational barriers. (See also the section on Immigration, p. 139.)

Anecdotally, immigrants who are incarcerated and find out their HIV status while in jail are another group of concern, as they might be deported as a result of their HIV status but return to the U.S. seeking health services.

**Day labor.** Although engaging in day labor is not in itself an HIV cofactor, Latino day laborers are a population of concern in San Francisco because of their exposure to multiple HIV cofactors, and anecdotal reports suggest that this population's HIV risk should be closely monitored. The most conclusive statement that can be made about this group is that there is little data documenting HIV risk and/or prevalence (Sanchez et al 2004). In a study that included 126 San Francisco day laborers, only one individual, who was male, tested positive (Kral et al 2006). Twenty percent of male participants reported male sex partners and 8% reported transgender partners in the prior six months. The sample had high rates of misinformation about HIV transmission, low rates of HIV testing (less than half had ever tested and received their result), and high rates of HIV cofactors, including having low socioeconomic status and being marginally housed. Three focus groups with day laborers in San Francisco also found low levels of HIV-related knowledge, as well as barriers to testing such as fear of knowing their HIV status (Burkholder & Guzman, n.d.). In another San Francisco-based study, Latino migrant laborers were shown to have some prevalence of STIs, although the prevalence was low: syphilis (0.4%), chlamydia (0.5%), and gonorrhea (3.5%) (Wong et al 2003). A small local needs assessment of Latino immigrant MSM, which included day laborers in the sample, found moderate levels of risk behavior and self-reported status of living with HIV (Harder+Company 2001).

More data exists on Latino migrant workers/day laborers who live in border cities (e.g., Tijuana, San Diego) than in San Francisco, although it is not clear to what extent the findings apply to San Francisco populations, and not all migrant workers are day laborers. One Tijuana/San Diego study found reported risk factors but no HIV infections (Martinez-Donate et al 2005). In a Los Angeles study, one of the 450 participants tested positive (Solorio et al n.d.). More information is needed to understand HIV testing behaviors among this group, because it is possible that those who are getting tested are not necessarily the group most at risk for HIV (Solorio et al). For example, in a Los Angeles study, 38% of day laborers reported being solicited by another man for sex, but those solicited were no more likely to report a history of having tested for HIV (Galvan et al 2008).

**Substance use.** As with other gay and bisexual men, Latino gay and bisexual men are affected by high levels of substance use, which influences HIV risk. In a study of Latino MSM stimulant users, 51% reported methamphetamine use and 44% reported cocaine use as their most frequently used stimulant (Diaz et al 2005). Among other reasons, participants cited sexual enhancement and social connection as reasons for their drug use. Heavy alcohol use was also prevalent in a sample of Latino gay and bisexual men and transfemales (Ramirez-Valles et al 2008), a factor which has been

shown to be driving the HIV epidemic in San Francisco. In this same study, sex while under the influence of alcohol or drugs in the prior 12 months was prevalent (42% and 19%, respectively).

**Mental health.** Psychological distress among Latino gay men has been linked to experiences of discrimination, which have been linked to high-risk sexual situations (Diaz et al 2004). In one study, adult Latino MSM living in San Francisco and two other cities were twice as likely to report a history of childhood sexual abuse as other MSM; 22% reported sexual abuse before the age of 13 (Arreola et al 2005). Childhood sexual abuse has been linked to HIV risk behaviors later in life in several studies (see the section on Mental Health, History of Childhood Sexual Abuse, p. 130). On the positive side, Mexican immigrants in one study conducted in San Diego reported an increased sense of freedom and ability to be themselves upon moving to the U.S., where they could be more open about their sexuality without fear of rejection from or negative consequences for their families (Carrillo et al 2008). In this case, however, increased sexual freedom could also expose these individuals to more high-risk situations.

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## **What Are the HPPC's HIV Prevention Recommendations for Latino/Latina People?**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

Programs for Latinos should focus on the highest risk populations, namely, MSM and transfemales. Although not the highest risk MSM, Latino MSM who identify as heterosexual are a subgroup that should not be ignored. As mentioned before, the Latino community is diverse and no one particular approach will work for all. Programs that speak to Latinos in the context of their culture are the key to successful prevention with this group. Programs that create a sense of family support, particularly for Latinos who are not geographically or emotionally close with their families, can provide an ideal setting for prevention messages to take hold. Confidentiality is important in HIV prevention for all populations, and it is especially important with Latinos who may be engaging in behaviors that might not be accepted by their families or communities of origin. Barriers to accessing services, including language barriers, poverty, HIV/AIDS stigma, and racial/ethnic bias in health care, are important considerations (Latino Advisory Board 2009). For more on the HIV prevention needs of Latino MSM, see the box below that reviews the recommendations from the Latino MSM Action Plan.

## **Recommendations from the Latino Action Plan: An HIV Prevention Section Special Project**

In the Spring of 2008 the HIV Prevention Section convened a group of Latino MSM and allies to discuss a local Latino Action Plan to adequately address the HIV prevention needs of Latino MSM in San Francisco. The group enlisted Rafael Diaz and Jorge Sánchez to work as consultants and assist the Latino Working Group with the creation of the Latino Action Plan. Recommendations from the Latino Action Plan were approved by the HPPC in September 2009. The full plan will be available sometime in 2009/10 and can be accessed at <http://sfhiv.org/> or contact the HIV Prevention Section for a copy.

The mission of the Latino Action Plan was to employ a community participatory research approach to describe the contexts that put Latino gay men and other Latino MSM at risk for HIV in an effort to make programmatic recommendations for strengthening services. The plan produced a set of 10 recommendations. The specific recommendations from the plan were prioritized by the Latino Working Group and are as follows:

## Recommendations from the Latino Action Plan: An HIV Prevention Section Special Project (continued)

### High Priority

**Recommendation 1:** Programs that provide relevant and tailored education on the interconnection of sexuality, relationships, substances and HIV. Community building in context that emphasize a sense of *familia*.

**Recommendation 2:** Culturally relevant programs that address the functional use and impact of substances -- emphasis on connection between stimulants and HIV. Need anti drug-stigma campaign and increased provider training.

**Recommendation 3:** Culturally tailored Prevention for Positives that addresses sexual behavior, HIV disclosure, and assessments of risk for HIV transmission among positive Latino men in a way that is non-stigmatizing. Campaigns aimed at reducing HIV stigmatization in the Latino gay community.

**Recommendation 4:** Programs need to address Latino gay men's concerns for job stability and financial well-being; that is, connect HIV prevention with the existing strong motivation towards "Superación" (improve one's situation - financial, educational, physical and emotional).

### Medium Priority

**Recommendation 5:** Programs that welcome and target Latino English-speaking gay men need to be developed. However, this should not be done at the expense of existing programming designed for immigrant, Spanish-speaking men.

**Recommendation 6:** Programs that help men make sound and accurate assessments of HIV risk in different sexual contexts and situations, including knowledge of HIV status of self and sexual partners.

**Recommendation 7:** A guiding structure (perhaps a website online) that orients new waves of young Latino gay men who are newcomers to San Francisco; "landing pads" would be healthy and supportive contexts rather than situations of risk where Latino gay men are sexually objectified.

### Low Priority

**Recommendation 8:** Create a program that targets the particular issues of older English-speaking Latino gay men of lower socioeconomic status who are also marginally housed (mostly in SROs or shelters). The program should address issues of life stability, as well as access to culturally appropriate mental health and substance abuse services.

**Recommendation 9:** Programs that address high burnout rates of HIV service providers. Existing Latino programs should be funded to carry out activities that prevent burnout and sustain the long-term, enthusiastic work of their front-line staff.

The Latino Working Group suggests that the following recommendation be placed in the Special Considerations Box of the 2010 priority setting model in an effort to generate more data that will substantiate its intended purpose.

**Recommendation 10:** Programs tailored to MSM who identify as heterosexual should be developed with targeted individual assessment and counseling by culturally trained prevention workers.

## What Are the HIV Prevention Needs of Native American People?

### NATIVE AMERICAN PEOPLE

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#### Epidemiology

Data on HIV among Native Americans in San Francisco is sparse and difficult to interpret. The population of Native Americans living in San Francisco is very small (0.2%), and Native Americans make up a very small proportion of people living with HIV/AIDS. In studies not conducted specifically with Native Americans, there are usually so few Native American participants that it is difficult to draw any conclusions that are generalizable to the larger Native American population in San Francisco.

Since the beginning of the epidemic, fewer than 150 Native Americans have been diagnosed with AIDS in San Francisco (SFDPH 2008e). Native Americans might be disproportionately affected by HIV compared with their numbers in the population, but again due to small numbers, it is difficult to draw any definitive conclusions.

The distribution of Native Americans across the various risk categories appears to be different than that for other racial/ethnic groups (SFDPH 2008e). Among males, the primary mode of transmission is MSM, but a far greater percentage of Native Americans diagnosed with AIDS are MSM-IDU compared with other groups (37%, compared with 20% for African Americans, the next highest group). For females, IDU cases far outweigh heterosexual AIDS cases diagnosed through 2008 (85% vs. 15%), although this is based only on the 13 Native American women ever diagnosed with AIDS. Cases among Native American transfemales are too few to report without compromising confidentiality. In summary, injection drug use appears to be a more prominent risk factor for HIV among Native Americans compared with other populations.

It should be noted that AIDS cases and PLWHA are likely undercounted due to misclassification of Native Americans into other racial groups and other reasons. One study found that 55% of Native Americans living with HIV/AIDS in California were misclassified as other races (Bertolli et al 2007).

HIV prevalence estimates are unreliable due to the reasons cited above; thus, the following data should be interpreted with caution. Estimates in the early 2000s put the prevalence between 2% and 9% for Native Americans overall (HIV Consensus Meeting 2001, data updated to June 2003). Studies among Native American MSM have found prevalence rates of 24% (Catania et al 2001) and 31% (Raymond 2009), although in the latter study it was only five of 16 MSM and thus is too small a sample to be generalized to the larger population. Another study found a 21% prevalence among Native American transfemales (Clements-Nolle et al 2001).

#### Behavior

Published data on Native Americans living in San Francisco and their behavioral risks for HIV could not be found. A few small local needs assessments and studies conducted in other urban areas provide us with a picture of behavioral risks among this group, although generalizability to San Francisco's Native Americans is unknown.

In one local needs assessment, which included males, females, and transfemales, 38% reported receptive anal sex, and of those, 42% never or almost never used condoms. Thirty percent reported insertive anal sex, and 40% never or almost never used condoms (NAAP 2006). Another small local study (n=56) found that 34% had a history of injection drug use, 38% reported unprotected sex in the last 12 months, and 49% had a history of sex trade. Males and transpersons in the sample had higher rates of all of these risk behaviors compared with the female participants (Walters 2008).

In two non-San Francisco studies with urban Native Americans, one with men and women and one with women only, about two-thirds of the sample reported recent sexual activity, and of those more than half never used a condom (Simoni et al 2004, Walters et al 2000). In the study with women, 19% reported a history of sex with an IDU, 7% had traded sex, more than half of women who were sexually active in the prior year never used condoms, and 6% had ever injected drugs (Simoni et al 2004). Data suggest a need for special attention to the unique risks faced by Native American women compared with Native American men (Stevens et al 2000) and compared with women of other races (Diamond et al 2001).

## Factors That Affect HIV Risk in San Francisco

Native Americans are profoundly affected by social and economic hardships that have been shown to be linked to HIV risk. Native Americans experience high rates of poverty and unemployment (Reynolds et al 2000), which are associated with cofactors that are directly associated with HIV transmission, including drug and alcohol use (Simoni et al 2004, Walters et al 2002, Walters et al 2000) and physical and sexual violence (Hobfoll et al 2002, Simoni et al 2004, Walters et al 2000). Low perception of risk might also be a contributing factor. Other salient issues that may affect risk for HIV infection among Native Americans, but for which there is little data, include discrimination, homophobia, mistrust of health care systems, and STIs. Because there are more services in San Francisco designed for Native Americans compared with other places, many who have experienced such life hardships (especially MSM and transfemales) come here to access services, and it is especially important that service providers understand the special needs of these groups.

**Substance use.** A number of studies have documented high rates of substance use among Native Americans linked to increased HIV risk. In a local needs assessment that focused on Native Americans of all genders, 72% used alcohol, 43% used drugs, and 28% injected drugs in the prior year (NAAP 2006). In another small local sample (n=56), 23% reported alcohol dependency, and an additional 23% reported symptoms of dependency but did not have a diagnosis (Walters 2008). In a study focused on women, 62% reported alcohol use and 28% reported heavy alcohol use in the prior year (Simoni et al 2004). In a sample of Native American women living in New York, 30% reported alcohol use before having sex (Morrison-Beedy et al 2001). In a sample of men and women, 43% reported alcohol or other drug use in the past six months, and use was associated with increased sexual risk for HIV (Walters et al 2000).

**Physical and sexual violence.** Extremely high rates of physical and sexual violence are reported by Native Americans. In the San Francisco-based needs assessment, 72% reported a lifetime history of sexual assault (NAAP 2006). Women in one study reported lifetime rates of physical and sexual assault of 37% and 39%, respectively (Simoni et al 2004), and these factors in turn were associated with increased lifetime sexual and drug-related risk for HIV. In another study that included men and women, 44% reported a history of trauma, including domestic violence, physical assault, and sexual assault by a family member or stranger (Walters et al 2000). The Honor Project, a small local study, also found high rates of trauma in the form of physical neglect (16%), emotional neglect (20%), sexual abuse (43%), physical abuse (13%), or emotional abuse (36%) (Walters 2008).

**Low perception of risk.** Studies report a low perception of risk among individuals who are in fact at high risk based on their reported behaviors. Morrison-Beedy et al (2001) found that women who did not consistently use condoms reported they felt less vulnerable to HIV and were less ready to change their behaviors. In another study, among HIV-negative and unknown status respondents reporting high-risk behavior, 44% rated themselves at low or no risk for HIV. This is important because those who did perceive themselves to be at higher risk were three times more likely to report having had a recent HIV test (Lapidus et al 2006), suggesting that perception of risk is an important motivator for getting tested. Despite the barriers to testing that low perceived risk can create, in the San Francisco-based needs assessment, participants reported high rates of HIV testing; 94% of the 50 participants had taken an HIV test at some point in their lives (NAAP 2006).

## What Are the HPPC's HIV Prevention Recommendations for Native American People?

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs:

Much of the HIV-related research that has been conducted with Native American women and men is not specific to sexual orientation or BRP. However, San Francisco epidemiologic data indicates that MSM and IDUs are the Native Americans most at risk; thus, programs should focus on reaching these groups. HIV interventions for Native Americans need to be culturally appropriate and address not only the behaviors and cofactors that put them at risk, but also the larger social and cultural issues that affect risk. Interventions that include involvement in Native American cultural activities may help programs attract and retain individuals, but in one study such involvement was not associated with a decrease in the three HIV risk behaviors examined (Marsiglia et al 2006). Thus such approaches may be necessary but not sufficient to influence HIV risk. In San Francisco, many Native Americans do not live here permanently and may pass through the city for a few days, weeks, or months to sell arts and crafts or attend powwows. This should be taken into consideration when designing programs, as there might be only a short window of time during which to reach this group with testing or prevention messages.

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## What Are the HIV Prevention Needs of White People?

### Epidemiology

#### WHITE PEOPLE

Epidemiologic data shows that Whites are disproportionately affected by HIV and AIDS in San Francisco, and this is largely attributable to HIV and AIDS cases among White gay men. This is in sharp contrast to the national epidemic, where only one-third of PLWHA are White compared with two-thirds in San Francisco (SFDPH 2008e). Whites represent 45% of the San Francisco population, but they make up 64% of PLWHA and between 50% and 57% of new HIV diagnoses between 2004 and 2008 (SFDPH 2008e). Although Whites continue to make up the highest percentage of HIV and AIDS cases, AIDS incidence in recent years has declined more in Whites than in other groups, which is likely due to better access to ART.

In addition, HIV prevalence is relatively high among White MSM and MSM-IDU. Studies have found HIV prevalence rates of 17–26% for White MSM (17% in NHBS 2008, 25% in Raymond 2009, 25% in Schwarz et al 2007, and 26% in McFarland 2007) and 28% for white MSM-IDU (Kral et al 2005).

Nearly all (97%) AIDS cases diagnosed among White men through 2008 have been among MSM and MSM-IDU. Among White women, over two-thirds of AIDS cases are among IDUs, with the remaining cases among heterosexual non-IDUs. Among transfemales, most AIDS cases are among IDUs (56%).

Trends in new infections are difficult to assess. Most trend data among Whites in San Francisco focuses on MSM, but the trends have not been tracked long enough to make any reliable assessments about whether new HIV infections are increasing, decreasing, or staying the same among White people overall. More longitudinal studies and analyses are needed to monitor changes over time.

### Factors That Affect HIV Risk in San Francisco

It is challenging to identify the particular behavioral risks and cofactors of White individuals because most studies do not highlight this information. This is because, many times, White individuals are used as the “standard” against which everyone else is assessed. Because racism and classism affects how research samples are recruited and who is willing to participate in research studies, White individuals are represented in virtually all study samples and often represent the majority. Therefore, much of the data we have about gay men, women, or other populations often speaks to the needs of and issues affecting White individuals, even if it is not explicitly highlighted in the findings. Many of the other populations described in this chapter (e.g., gay men, women, transfemales, IDUs) implicitly describe the needs of Whites, so additional details are not given here except when there is a particular issue needing attention.

Sexual risk is the primary factor driving new HIV infections in White MSM and MSM-IDU (Kral et al 2005, Shafer et al 2002). One study showed that among MSM living with HIV, older White men were more likely to report having had unprotected anal sex with a partner who was

HIV-negative (Chen et al 2003). Schwarz et al (2007) found that 17% of White MSM living with HIV reported unprotected insertive anal sex with an HIV-negative or unknown status partner, but this was no different than other racial/ethnic groups.

White gay men have particular drug use patterns that may put them at higher risk for HIV. For example, speed users are more likely than cocaine users to be White, male, gay or bisexual, living with HIV, and to share needles (Copeland & Sorenson 2001). A community survey among MSM showed that one significant predictor of Viagra use is being White (Chu et al 2003). All of these drugs have been associated with increased HIV risk behaviors among gay men.

White people living with HIV might also not be getting the prevention messages they need due to provider-level stereotypes. In one study of 16 publicly funded clinics located in urban and rural settings, including San Francisco, clinics where providers expressed stronger beliefs that patients living with HIV are unlikely to change their behaviors were less likely to provide HIV prevention counseling. Patients in clinics where this belief was strong were more likely to be White, gay, educated, and older (Steward et al 2006). It is not clear to what extent these findings would apply to individuals who receive care in private settings.

Finally, although Whites overall are a socioeconomically advantaged group, not all White individuals have access to the social, health, and economic resources needed to protect against HIV. Many of the cofactors that apply to marginalized populations also apply to some groups of Whites, including poverty, incarceration, sex work, and others. (See the Section III: Cofactors, p. 125).

## **What Are the HPPC's HIV Prevention Recommendations for White People?**

The HPPC believes that attention to the prevention needs of Whites means attention to the prevention needs of gay and bisexual men, both those who inject drugs and those who do not, as well as transfemales and female IDUs. For more information on the prevention needs of these groups, see the following sections: Gay Men, p. 66, Bisexual Men, p. 70, Transfemales, p. 75, and Injection Drug Users, p. 88.

# **PART E** *Youth*

## **What Are the HIV Prevention Needs of Youth?**

In most cases, the HPPC defines youth as people age 24 and under. The 25- to 29-year-old age group often falls in the gray area between youth and adults, so some data on this age group is also presented here.

Youth in general are vulnerable to many health issues, simply because they lack the power and access to accurate information that many adults in our society take for granted. Furthermore, young people, more than older people, are forming their sexual identities in the context of peer pressures and societal values and norms that may not support the identities they are discovering. Their behaviors and risks might change as they experiment with what feels right for them. In an ideal world, all youth would have access to the information, skills, and support that will help them make healthy choices about sex and drugs that would ultimately protect them from HIV. In the real world of limited resources, it is important to recognize that certain youth are particularly vulnerable and require special attention. These youth are highlighted in the following sections.

### **Epidemiology**

Nationally, it is estimated that 35% of all new HIV infections occur in young people ages 13 to 29 years old (MMWR 2008). In San Francisco, the HIV patterns are decidedly different. In 2008, 26% of newly diagnosed HIV infections were among this age group, and two thirds of those (62%) were among 25- to 29-year-olds (SFPDPH HIV Epidemiology Section, special data

request, April 2009). In addition, HIV prevalence among youth is extremely low compared to other groups and incidence has mirrored this trend by also remaining low; furthermore, youth incidence and prevalence in San Francisco decreased between 1989 and 1998 (Razani et al 2006). Twenty-five years into the HIV epidemic in San Francisco, it appears that HIV incidence and prevalence continue to remain more of a concern in older groups.

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Despite this encouraging news, some groups of young people in San Francisco are more at risk than others:

- **MSM and MSM-IDU youth are at greater risk than other youth.** Young MSM and MSM-IDU represent 74% of the 164 PLWHA aged 13 to 24 in San Francisco, excluding those who were perinatally infected.
- **Older MSM youth (25-29) have a higher HIV prevalence than younger MSM youth (under 25).** Prevalence data for MSM youth of different ages are presented in Exhibit 5. MSM in older youth age groups have higher prevalence than younger youth. The most recent data on MSM youth comes from two quasi-probability-based samples of MSM in San Francisco, both of which showed HIV prevalence among MSM under 25 at 4% (Raymond 2008a, NHBS 2008).
- **How youth are affected by HIV differs by race/ethnicity.** African American MSM youth in most studies have a higher HIV prevalence than other racial/ethnic groups, followed by Latinos, both locally and in other urban areas (Valleroy et al 2000, MMWR 2001). For HIV prevalence among various youth populations, see Exhibit 5. Among 20- to 29-year-olds living with HIV/AIDS, who may have acquired HIV at younger ages, Whites represent the majority of cases among men, but people of color represent the majority of cases among women and transfemales (Exhibit 6).
- **Youth affected by certain cofactors, such as homelessness, could be at greater risk.** Several studies conducted in the 1990s showed that homeless male youth, particularly those identifying as gay/bisexual, had a very high HIV prevalence (for a summary of studies, see p. 96 of the 2004 San Francisco HIV Prevention Plan), although recent data is lacking.

## EXHIBIT 5 HIV Prevalence Among MSM and IDU Youth in San Francisco

YOUTH POPULATION	PREVALENCE AND SOURCE
MSM ages 15-17	2% (Waldo et al 2000)
MSM ages 15-22	7% (Valleroy et al 2000)
MSM ages 18-22	7% (Waldo et al 2000)
MSM ages 18-29	9% (Catania et al 2001)
MSM ages 18-24	0% (Schwarz et al 2007)
MSM under 25	4% (Assort Study 2008, NHBS 2008)
MSM ages 22-33	10% (Catania et al 2001)
Young MSM-IDU	12% (Bacon et al 2006)
Young African American MSM	16% (Valleroy et al 2000)
Young Asian and Pacific Islander MSM	3% (Choi et al 2004)
Homeless MSM and MSM/F under 30	11% (Robertson et al 2004)
Young homeless gay and bisexual males	29% (Robertson et al 2004)
Young gay and bisexual street-recruited IDUs	16% (Shafer et al 2002)

It should be noted that HIV prevalence among youth under 25 does not necessarily provide a complete picture of risk among youth. Individuals diagnosed and/or living with HIV in their twenties (or older) likely acquired HIV when they were younger, and thus might be a useful group to examine in order to understand youth HIV risk. Data on 20- to 29-year-olds living with HIV/AIDS are presented in Exhibit 6 as an indicator of youth risk.

#### EXHIBIT 6 People Living with HIV/AIDS, Ages 20 to 29\*

	African American		Asian and Pacific Islander		Latino		Native American		White		Total**	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Males	279	73	175	83	606	88	27	85	1718	95	2853	90
Females	68	18	21	10	47	7	NR	NR	72	4	215	7
Transfemales	37	10	14	7	34	5	NR	NR	25	1	114	4
<b>TOTAL</b>	<b>384</b>	<b>100</b>	<b>210</b>	<b>100</b>	<b>687</b>	<b>100</b>	<b>32</b>	<b>100</b>	<b>1815</b>	<b>100</b>	<b>3182</b>	<b>100</b>

Source: HIV Epidemiology Section, special data request, January 2009.

NR = Data not reported due to small numbers

\*Age at earliest documentation of HIV status. AIDS diagnosis date was used if no earlier documentation existed.

\*\*Includes people with multiple or unknown race

## Behavior

In the past 10 to 15 years, a body of research has emerged documenting high-risk behaviors among youth in San Francisco, including high rates of sexual activity, initiation of sex at an early age, multiple sexual partners, low condom use rates, and high rates of injection and non-injection drug use, with a particular focus on homeless and marginally housed youth. More recent research has explored new questions and focuses largely on IDU youth. Findings from three of these studies are as follows:

- A mobile population of young IDUs (i.e., moving in and out of San Francisco) in one study had higher rates of risk behavior than non-mobile IDUs (i.e., those who had not travelled outside of San Francisco in the prior three months), including a higher number of sexual and IDU partners and receptive syringe sharing (Hahn et al 2008).
- Among young MSM-IDU in another study, consistent condom use was only 41%, but varied by partner type (Bacon et al 2006).
- Young females IDUs were more likely than their male counterparts to engage in needle borrowing and ancillary equipment sharing, be injected by someone else, report recent sexual intercourse, and have IDU sex partners (Evans et al 2003).

It is noteworthy to point out that the changes in sexual risk behaviors among gay men during the late 1990s/early 2000s may have occurred differently among young MSM compared with older MSM. For example, one study showed that MSM aged 30 to 50 had the largest increases in unprotected anal sex, and MSM aged 18 to 29 had the largest increases in reported selection of sex partners with the same HIV status (Osmond et al 2007). Another study found that young HIV-positive MSM were more likely to have unprotected sex with partners living with HIV, and that decisions about condom use were based on perception of their partners' risk for acquisition of HIV (Lightfoot et al 2005). A third study concluded the opposite; in this study, rates of unprotected sex among younger MSM surpassed those of older MSM in 2001 (Chen et al 2003). In summary, it remains unclear whether young MSM experienced the same increases in HIV risk that occurred among older MSM between approximately 1999 and 2003.

## Factors That Affect HIV Risk in San Francisco

Among the many cofactors that can lead to increased risk among youth, substance use, sex work, homelessness, and being unaware of HIV status are the most well-documented and are discussed below. STIs, which may facilitate HIV transmission, are also discussed and might increase an individual's risk if exposed to HIV, but do not appear to be contributing substantially to an HIV epidemic among youth overall in San Francisco, with the possible exception of young MSM.

**Substance use.** The link between sexual risk behavior and drug use is particularly strong for gay male and IDU youth. For example, among 15 to 22 year old gay and bisexual men, use of speed, ecstasy, and poppers was associated with unprotected anal intercourse (Waldo et al 2000). In addition, studies have found that young IDUs commonly have injection partners or sexual partners with whom they share needles and drug preparation equipment (Hahn et al 2002), particularly young female IDUs (Evans et al 2003, Hahn et al 2008). Frequent and heavy use of alcohol, as well as polysubstance use, among young gay and bisexual men were shown to be associated with multiple sex partners and HIV seropositivity in one study (Greenwood et al 2001). Heavy alcohol use and polysubstance use, which have been found to be associated with HIV risk, were more common in young mobile IDUs compared with those who were more permanently settled in San Francisco in a study by Hahn et al (2008). (See also the Sections on Gay Men, p. 66, and IDUs, p. 88.)

**Sex work.** Drug use is closely linked with sex work; in a recent study of young MSM-IDU, 68% reported being paid by another man for sex (Bacon et al 2006). In this same study, HIV infection was independently associated with having a higher number of paying sex partners and a history of gonorrhea.

**Homelessness.** As mentioned earlier, numerous studies throughout the 1990s have found high rates of HIV among homeless and marginally housed youth in San Francisco, particularly gay/bisexual male youth. Homelessness and being a runaway have a substantial effect on the types of risks youth engage in. Data shows that homeless youth have high rates of injection drug use, having sex while under the influence of alcohol or drugs, and needle sharing and reuse. They are also exposed to sexual coercion and abuse, engage in survival sex, have multiple partners, use condoms inconsistently, and use speed and heroin. Homeless youth who use heroin, speed, or cocaine might take more sexual risks than non-users. (For supporting studies for the data on homelessness among youth, see p. 98 of the 2004 San Francisco HIV Prevention Plan.)

**STIs.** The prevalence of STIs indicates that youth are engaging in behavior that could put them at risk for HIV. African American youth, in particular, have six to eight times higher rates of chlamydia and gonorrhea than other racial/ethnic groups (SFDPH STD Prevention and Control, special data request, January 2009). Fortunately, to date, this population has not experienced a corresponding HIV epidemic, probably due to a low initial prevalence of HIV in youth sexual networks.

**Lack of knowledge of HIV status.** In general, youth are probably less likely than adults to perceive themselves to be a risk for HIV. Young African American MSM reported not testing frequently for HIV and engaging in high-risk behavior because they perceived that they or their partners were at low risk for infection (MMWR 2002). Among those who tested positive in this study, nearly all were unaware of their infection. A study of young MSM-IDU echoed this finding; 42% of those who tested positive were unaware they were infected (Bacon et al 2006).

## What Are the HPPC's HIV Prevention Recommendations for Youth?

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

HIV prevention programs for youth should be integrated and interconnected to other services, such as substance use, mental health, STI testing and treatment, housing, educational development, job training, and syringe access, given that youth at risk for HIV have multiple pressing and compelling needs. Programs should focus on the highest risk youth, including MSM, IDU, and homeless or marginally housed youth. Peer approaches are particularly important, and services provided to youth should be sensitive to their physical, developmental, and emotional needs. When possible, resources permitting, youth who might not currently report high-risk

behavior but who could potentially become high-risk in the future, should also be reached with prevention messages. This would include youth who may be dealing with issues around sexual identity and those who might be exposed to situations in which drugs are used or injected.

## PART F

# Additional Populations

## What Are the HIV Prevention Needs of People Who Test Late for HIV?

### Epidemiology

#### PEOPLE WHO TEST LATE FOR HIV

In recent years, there has been great interest in San Francisco and nationally in people who are living with HIV but are unaware of their infection, because these individuals might unknowingly transmit HIV, which fuels the epidemic. Many of these people do not find out their HIV status until months or even years after they become infected, and often their HIV diagnosis is made only because they develop an opportunistic infection, which prompts them to seek medical care.

In order to describe the demographic characteristics of people who test late for HIV in San Francisco, it is necessary to define what constitutes a “late tester.” A commonly accepted definition is a person who receives an AIDS diagnosis within 12 months of their first positive HIV test, but new research (Schwarcz et al 2008a) has uncovered an important limitation in this definition, which is that a substantial proportion of individuals who meet these criteria did not test late for HIV. There are at least two other reasons for receiving HIV and AIDS diagnoses within 12 months of each other (S. Schwarcz, personal communication, December 2008). First, some people living with HIV experience a transient decline in CD4 count resulting in an AIDS diagnosis due to acute HIV infection, use of steroids, or other unknown reasons, even if their HIV diagnosis was made early in the course of their disease. Second, on occasion, people living with HIV can develop an opportunistic infection soon after seroconversion, resulting in an AIDS diagnosis.

Using this definition of an AIDS diagnosis within 12 months of a first positive HIV test, it was believed that approximately 39% of all people living with AIDS in San Francisco tested late for HIV (Schwarcz et al 2006). However, based on in-depth interviews with a sample of people whose circumstances met the definition of late testing, this definition may misclassify approximately 41% of individuals (Schwarcz et al 2008). (An additional 42% of those originally classified as late testers could not be assessed to determine whether they actually tested late because they were not living in San Francisco, declined to be interviewed, were lost to follow up, or other reasons.) Given these findings, the prevalence of late testing in San Francisco is probably much lower than previously estimated.

Late testing in San Francisco was thought to be associated with younger age (less than 30), identifying as heterosexual, having no reported risk, having prior or no insurance, and being born outside the U.S. (Schwarcz et al 2006). These factors might in reality be associated with other reasons for an early AIDS diagnosis, and further research is needed. A handful of studies conducted in San Francisco have documented high percentages of unrecognized HIV infections in some demographic groups (Exhibit 7). A very recent study found that in San Francisco, high concentrations of MSM who do not know they are infected can be found in public sex environments, suggesting that HIV testing can be promoted in specific settings to reach late and non-testers (Raymond et al 2008).

## EXHIBIT 7 Unrecognized HIV Infection Among MSM in San Francisco

POPULATION	PARTICIPANTS LIVING WITH HIV WHO WERE UNAWARE OF THEIR STATUS	
	PERCENT	111
Overall	19%	
<b>BY RACE/ETHNICITY</b>		
African American	33%	
Asian and Pacific Islander	30%	
Latino	32%	
White	2%	
Additional/Unknown	50%	
<b>BY AGE</b>		
13-24	36%	
25-49	23%	
50+	5%	

Source: NHBS 2008.

Finally, a revised definition of late testing might be needed that excludes people who did not actually test late. One possibility is to incorporate a criterion related to a person's most recent HIV-negative result, which could help to determine when seroconversion actually occurred in relation to the date of the first HIV-positive test.

## Behavior and Factors That Affect HIV Risk in San Francisco

While there is no single profile of a person who tests late in San Francisco, there are three specific issues that contribute to people not testing or delaying testing for HIV: (1) cognitive factors (knowledge, beliefs, and perceptions about HIV and personal risk), (2) substance use, and (3) social and structural barriers to HIV testing. Each of these is discussed below.

**Cognitive factors.** Several studies done in different parts of the U.S. have documented that a perception of not being at risk, fear of finding out one is living with HIV, fear of stigma and discrimination, and low levels of knowledge of how HIV is transmitted are all reasons that people avoid or delay testing (Fortenberry et al 2002, Harder+Company 2007, Kellerman et al 2002, MacKellar et al 2005). In San Francisco, a small qualitative needs assessment found that, in addition, even people who perceived themselves to be at high risk for HIV prior to finding out their status recall being relatively unconcerned about HIV at the time, and thus delayed testing (Harder+Company 2007). In this same assessment, those who considered themselves at low risk for HIV but later tested positive tended to be heterosexually identified males and believed HIV primarily affected the gay community, which contributed to delayed testing.

**Substance use.** In the Harder+Company qualitative assessment (2007), several participants cited their substance use as a barrier to them acknowledging their risk and getting tested. Being high or drunk, survival needs, and the effort involved in maintaining a drug habit were all cited as life realities that overshadowed or obscured concern about HIV.

**Social and structural barriers to HIV testing.** Overall, the strategy of targeted testing has been successful at identifying new HIV infections because it focuses on raising awareness of risk and encouraging testing among demographic and behavioral risk groups with high rates of HIV infection. Its weakness has been that it does not effectively reach those who do not fall into traditional high-risk groups and those who do not perceive themselves to be at risk.

resulting in late or non-testing among some people who are actually infected. Individuals in these groups are unlikely to seek testing on their own. They may not have access to health care, and even if they do, it is possible that their provider would not offer them an HIV test. Often, patients seeking health care who are living with HIV but do not know it may present with an entirely unrelated issue, and the provider then addresses only this issue and does not assess for HIV risk or offer testing. To address this, structural supports for HIV testing need to be put in place, such as routine testing protocols and improved reimbursement structures for routine HIV testing.

The following recently implemented strategies, policies, and legislation at the local, state, and federal levels might eventually help to reduce these types of barriers:

- CDC's revised recommendations for HIV testing in health care settings, which encourages routine (non-targeted) opt-out HIV testing for all individuals aged 13 to 64 in settings where the prevalence of HIV is either unknown or greater than 0.1%, and annual re-testing of high-risk individuals (MMWR 2006a);
- CDC's pilot project for increasing routine HIV testing in emergency room settings (San Francisco is one site);
- California's AB 682, which removed the requirement for written consent for HIV testing in order to reduce barriers to HIV testing in private medical settings, which went into effect on January 1, 2008; and
- California's AB1894, which requires health care plans operating in the state to pay for routine HIV testing, which went into effect on January 1, 2009.

These structural changes have already begun to affect the way that HIV testing is implemented both in private settings (e.g., new guidelines at Kaiser Permanente regarding HIV screening) as well as public (e.g., encouragement of HIV testing among California's Family Planning, Access, Care and Treatment Providers [FAMILYPACT]).

## **What Are the HPPC's HIV Prevention Recommendations for People Who Test Late for HIV?**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

It is critical, both for HIV prevention and the health of San Franciscans, that people who are HIV-infected but do not know it learn their HIV status as early as possible. This means employing a range of strategies to try to reach these individuals, including social networks-based approaches, indentifying and targeting venues where high concentrations of people at risk for late testing can be found, providing the education and knowledge so that people can accurately assess their own risk, and structural changes (such as routine testing) that will facilitate HIV testing of people at risk even when they are not necessarily seeking an HIV test. In addition, interviews with people who test late in San Francisco revealed that many may be unaware that there are effective therapies for HIV and that they are available at low or no cost (Schwarcz et al 2008), suggesting a need for community education. Further, some interviewees expressed an interest in having providers be more assertive in discussing HIV testing, by presenting it as a strong recommendation as opposed to a suggestion or offer (Schwarcz et al 2008a). See the accompanying box on the local needs assessment conducted with people who tested late for HIV for additional recommendations (p. 113).

## **Recommendations from an HPPC-Prioritized Needs Assessment: People Who Test Late for HIV**

In June 2006, the HPPC prioritized a behavioral needs assessment with individuals who test late in the course of HIV disease (Harder+Company 2007). The needs assessment used the following methods: review of local AIDS case registry data, semi-structured qualitative interviews with 25 individuals who tested late for HIV, and two focus groups with sub-samples of interview participants. The study explored the demographic and risk characteristics of individuals who test late for HIV in San Francisco, barriers to HIV testing among this group, factors that led individuals to ultimately get tested, and strategies that would have encouraged people to test earlier. The researchers offered the following recommendations based on the findings:

- Consider late HIV testing in the design of prevention efforts for specific risk groups and populations.
- Provide prevention messages that emphasize ability to lead a healthy life after testing positive for HIV.
- Employ social networks-based strategies and others that promote disclosure.
- Provide financial and other incentives to encourage HIV testing among substance users at high risk for HIV.
- Provide prevention messages tailored to those who do not see themselves as being at risk for HIV.
- Provide post-test and follow up counseling to individuals who perceive themselves to be at low risk for HIV.
- Learn more about the effectiveness of HIV screening in health care settings.
- Develop structural interventions aimed at promoting earlier HIV testing.
- Provide prevention messages that are linguistically and culturally appropriate to reach Latinos and persons born outside the U.S.
- Conduct additional research regarding late HIV testing in San Francisco.

## **What Are the HIV Prevention Needs of Non-San Franciscans and New San Franciscans?**

### **NON-SAN FRANCISCANS AND NEW SAN FRANCISCANS**

Non-San Franciscans at risk for HIV include three main groups: (1) individuals who live outside of the Bay Area who come here for a few days or a few weeks for business or leisure, (2) individuals who live in other Bay Area locales such as Oakland or San Mateo and work here and/or come here for leisure; and (3) individuals who have just moved to the city from elsewhere in the U.S. or another country. Data on HIV epidemiology and risk for these populations is limited, except for immigrants (see the section on Immigration, p. 139).

**People who live outside of San Francisco or the Bay Area (groups 1 and 2 above).** People come from all over the Bay Area and the country to socialize and enjoy the freedoms and opportunities that San Francisco has to offer. Mobility of populations in general – both due to changing residence and traveling (e.g., for business, circuit parties) – has implications for HIV transmission and affects epidemics all over the country. Anecdotally, individuals who live in the Bay Area and commute to San Francisco for work or come here for leisure may tend to be higher risk than tourists.

HIV risk is of particular concern among gay men and other MSM who come to the city for recreation. Gay men from other locales may be attracted to San Francisco because of the strong gay community here and thus may engage in the same behaviors that gay men who live here do, even if there are different norms in their home communities. These men might only be reached by HIV prevention when it is done at certain times and places – e.g., during late night hours, at bars or clubs. Men who do not identify as gay may come to the city for sex with men (Harder+Company 2004a) or transfemales (Coan et al 2005). Such opportunities are accessible here in a way they are not in other Bay Area cities, and these men may feel safer engaging in such behaviors outside of their hometowns for privacy reasons.

Data from two 2008 representative quasi-probability samples of MSM reached in bars, on street corners, and other places where MSM congregate revealed that out of towners were similar to long-time residents in their reported rates of unprotected insertive and receptive anal sex, but were less likely to be HIV-positive (Raymond 2008b).

#### **People who recently moved to San Francisco (group 3 above).**

Newcomers to San Francisco are another group of concern. Both immigrants and those moving here from other areas in the country, especially gay men and other MSM, are not yet accustomed to the unique culture of San Francisco. The norms and values that newcomers bring with them from their hometowns might act as protective factors against HIV, or they might put them at greater risk in sexual or drug use situations.

Data on this group is mixed. One random digit dial telephone survey of gay men conducted in 2002-2003 found that unprotected receptive anal sex with a serodiscordant partner among men not known to be HIV-infected was independently associated with having lived in San Francisco for less than one year (Schwartz et al 2007). In contrast, data from the 2008 quasi-probability samples of MSM mentioned above showed that those who lived in San Francisco less than three years were also similar to long-time residents in their reported rates of unprotected insertive and receptive anal sex, and also were less likely to be HIV-positive (H. Fisher Raymond, personal communication, December 2008). In a subsample of MSM in a 2008 quasi-probability-based study of San Francisco MSM (n=138), HIV positivity among newcomer MSM (in San Francisco for 2 years or less) was lower than the overall prevalence among MSM (14% vs. 26%; NHBS 2008). However, unrecognized HIV infection was higher among newcomers (26% for newcomers vs. 17% overall; NHBS 2008), possibly due to not getting tested at all or testing less frequently in their home of origin (H. Fisher Raymond, personal communication, February 2009).

### **What Are the HPPC's HIV Prevention Recommendations for Non-San Franciscans and New San Franciscans?**

Based on the data presented above as well as community experience, the HPPC believes that HIV prevention providers should incorporate the following HIV prevention approaches into their programs.

HIV prevention programs must consider that, regardless of who their priority population is, they will likely encounter non-San Francisco residents or individuals who have just moved here. Addressing their prevention needs is important because of the potential for the spread of HIV within and outside of San Francisco. A regional focus on HIV prevention is also needed and requires Bay Area-wide coordination of HIV prevention, especially between East Bay cities (e.g., Oakland, Berkeley) and San Francisco.

## INTRODUCTION

Drivers of the HIV epidemic are one of the four focus areas highlighted throughout this Plan. Although drivers are being explicitly integrated into HIV prevention in San Francisco for the first time with the implementation of the 2010 HIV Prevention Plan, the concept underlying drivers is not new.

### The HPPC's Definition of a Driver

**A driver is an underlying condition that is directly linked to a large number of new infections throughout San Francisco. By definition, drivers should be factors that are affecting the high-risk behavioral risk populations, or BRPs (MSM, TFSM, or IDU), since that is where the bulk of new infections are.**

Like cofactors, drivers are underlying conditions that may lead people to engage in high-risk behaviors such as unprotected sex or risky injection practices, or factors that may increase individuals' susceptibility to HIV. The list of drivers is limited exclusively to conditions that appear to be independently fueling a large number of new infections; in contrast, cofactors are associated with fewer infections or may not be independently associated with new infections. Therefore, drivers influence not just individuals or communities, but the continuation of the epidemic in San Francisco as a whole. Addressing drivers through HIV prevention efforts presents an opportunity to reduce the spread of HIV by addressing these motivators of risky behavior and factors for increased susceptibility. Drivers' independent link with large numbers of new infections makes them an essential component of HIV prevention.

In order for drivers to be fueling a large number of new infections, a driver must have an independent association with increasing an individual's risk for HIV, and must be experienced by a large proportion of people in groups where most new infections are occurring. Using this logic, the HPPC developed the following criteria to help define and identify drivers.

To be a driver of HIV in San Francisco, an issue must meet the following criteria:

1. Be an independent factor for HIV transmission in San Francisco, meaning that it is not dependent on other factors for HIV transmission to occur (e.g., drivers are not dependent on other factors such as unprotected sex or injection drug use for HIV transmission to occur).
2. Be an independent factor for HIV transmission in San Francisco, meaning that it is not dependent on other factors for HIV transmission to occur (e.g., drivers are not dependent on other factors such as unprotected sex or injection drug use for HIV transmission to occur).
3. Be an independent factor for HIV transmission in San Francisco, meaning that it is not dependent on other factors for HIV transmission to occur (e.g., drivers are not dependent on other factors such as unprotected sex or injection drug use for HIV transmission to occur).

Regarding criterion #2 above, "independent" means that, even taking into consideration other issues, the factor in question is still linked to HIV acquisition. For example, people who seroconverted might report methamphetamine use, ketamine use, and a history of depression. Each of these three factors can be tested to see if it has a direct link (i.e., an independent association) to HIV transmission by using statistical methods to adjust for the influence of the other factors. This process is called "controlling for other factors".

There are two important issues to understand in relation to drivers. First, overarching factors such as racism, homophobia, poverty, loneliness, and lack of access to health care create an environment in which certain individuals or communities become more prone to experiencing a driver, thus increasing risk for acquiring HIV. While these contextual factors are not proximal enough to the point of HIV infection to be identified as drivers, they must not be overlooked. For a fuller discussion of contextual factors, see Chapter 3: Priority Setting, p. 150-168.

Second, some issues may be cofactors for certain populations but do not rise to the level of a driver as defined by the above criteria, but that does not mean they are not important.

Two examples are as follows:

**1. Internet use.** Using the Internet to find sexual partners is a cofactor that needs to be addressed among individuals who engage in risky behaviors with these partners. While some research has shown that MSM who meet partners on line tend to have more partners, more STIs, and more unprotected sex (McKinna et al 2007, Rebchook et al 2003), other studies have not shown such associations (Chiasson et al 2007, Mustanski 2007). Ultimately, no research establishing an independent association between use of the Internet to meet sex partners and HIV seroconversion was found.

**2. Sex work.** Although the prevalence of sex work among TFSM in San Francisco is higher than 10% (Clements-Nolle et al 2001) and there is an independent association with HIV infection, the increased risk is only 1.5 times higher (Operario et al 2008b), not two times as specified in criterion #2.

For a description of how drivers fit into the priority setting model, see Chapter 3: Priority Setting, pp. 155-158 and p. 162. For a list of guiding principles for addressing drivers, see Chapter 4: Strategies and Interventions, pp. 173-174.

The following sections discuss the drivers that meet the HPPC's criteria.

## SUBSTANCE USE

There are four substances that meet the HPPC's criteria for being a driver: cocaine/crack, heavy alcohol use, methamphetamine, and poppers. These are discussed below. For more on other substances and how drug use can increase HIV risk, see Section III: Cofactors, under Substance Use (p. 126). In addition, the specific effects of substance use on different populations are discussed in Section I: Populations (p. 62).

### Cocaine and Crack Use

Cocaine is an addictive stimulant that is usually sniffed, injected, or smoked. It is taken largely because of its euphoric effects, and it can enhance sexual interest and pleasure, decrease inhibitions, heighten the sense of invulnerability, and lead to increased risk behavior. It also causes hyperactivity, increased blood pressure, increased heart rate, and decreased appetite. The high usually lasts from 60 to 90 minutes and is often followed by a "crash" characterized by discomfort and depression. Crack is a smoke-able and highly addictive form of cocaine. It is also less expensive and thus is often more accessible to people in lower sociodemographic groups. The high is usually shorter than with cocaine (about 5 minutes) and the crash more profound. Cocaine and crack are often mixed with other drugs, such as heroin and hydrocodone (Vicodin).

In addition, cocaine and crack have physical effects that may increase HIV risk, such as inhibition of ejaculation, which may lengthen the sex and thus increase skin abrasions that could lead to HIV transmission. Like methamphetamine, cocaine and crack can have numbing effects that reduce pain during rough sex, and thus users might be less aware of any tissue damage occurring during anal sex that could create openings for the HIV virus to enter. Crack users frequently develop mouth sores, which could increase risk during oral sex, an otherwise low-risk behavior (Faruque et al 1996).

Cocaine/crack use is considered a driver for HIV infection in San Francisco for two reasons: (1) use is prevalent (10% or higher) among populations at high risk for HIV; and (2) one study has shown an independent association more than doubling the risk of HIV acquisition (Exhibit 8). Again, independent association means that even taking into consideration other factors, cocaine/crack use still had a direct link to HIV seroconversion in this study. Prevalence of cocaine/crack use among MSM and IDU ranges from 15% to 25%, depending on the study (see Exhibit 8 for studies). The evidence for an independent association between crack/cocaine use is not as extensive or current as it is with other drugs such as methamphetamine. Nevertheless, the HPPC's driver criteria are met. One study found increased odds of seroconversion associated with cocaine use, ranging from 2.5 to 2.8 (Chesney et al 1998).

## EXHIBIT 8 Data Supporting Cocaine/Crack Use as a Driver of HIV Infection

### PREVALENCE OF COCAINE/CRACK USE IS GREATER THAN 10% AMONG ONE OR MORE HIGH-RISK BRPs

19% of San Francisco MSM participants used cocaine in the 6 months prior to entering the study (Koblin et al 2003).

15% of MSM participants used cocaine at least 1 day per month in the past 12 months (Schwarz et al 2007).

25% of MSM participants used cocaine in the past 12 months (NHBS 2008).

20% of IDUs injected crack, 55% used non-injection crack, 34% injected cocaine, and 18% used non-injection cocaine in the past 12 months (NHBS 2005).

### COCAINE/CRACK USE IS INDEPENDENTLY ASSOCIATED WITH HIV INCIDENCE

Gay men who reported current\* cocaine use were 2.8 times more likely than non-users to seroconvert during the study. Similarly, consistent\* cocaine users were 2.5 times more likely than nonusers to seroconvert (Chesney et al 1998).

\* Interviews were conducted periodically over the course of 6 years. Current users are defined as people who reported cocaine use during a particular interview period, but not during the previous period. Consistent users are defined as people who reported cocaine use during the current period and the interview period immediately prior.

Additional data supporting the prioritization of cocaine/crack use is worth highlighting, although the following data did not meet the driver criteria because risk behavior is the outcome and not HIV incidence:

- The EXPLORE study, conducted with MSM, found that high-risk sexual behavior was more common among participants during periods in their lives when they were using snuffed cocaine (Colfax et al 2005). The same study noted an increased odds of engaging in serodiscordant unprotected sex among MSM users of snuffed cocaine, and these odds appeared to increase with the frequency of cocaine use (Colfax et al 2004).
- Another study found that among MSM living with HIV, cocaine/crack users were more likely than non-users to report unprotected insertive and receptive anal sex with HIV-negative or unknown status partners, but more in-depth analysis did not establish cocaine/crack use as an independent predictor of this risk behavior (Purcell et al 2001).

Other important information related to cocaine/crack use in San Francisco is as follows:

- In 2007/2008, cocaine/crack was the primary drug use issue for 22% of people seeking publicly funded substance use treatment in San Francisco, similar to alcohol (see Exhibits 15 and 16 under Section III: Cofactors, Substance Use, p. 129, for breakdowns by race/ethnicity).
- Crack use among heterosexuals is also of concern, although it is not a driver of HIV because heterosexuals are generally a low risk group overall in San Francisco. Higher rates of risk behavior associated with crack use have been found among heterosexual men living with HIV (Courtenay-Quirk et al 2008) and poor female sex workers (Edlin et al 1994), although whether crack use is independently associated with HIV risk among this population is unclear.
- Crack use is common in the Tenderloin neighborhood, which is home to many San Franciscans living in poverty. It particularly affects African Americans and transfemales who live and/or access services there and is intricately tied to sex exchange (Williams et al 2000).

## Heavy Alcohol Use

Alcohol is a central nervous system depressant. Initially, alcohol can lead to pleasurable feelings and reduce inhibitions, but further consumption can lead to various side effects (such as tiredness, confusion, loss of consciousness, and even death), depending on how much is consumed over what period of time.

It is commonly assumed that the disinhibition-related effects of alcohol can lead people to engage in high-risk sexual behaviors, thus placing them at risk for HIV. However, research conducted in the past 10 to 15 years on the connection between alcohol use and HIV risk has been mixed, with some studies finding associations and others not. Recently, a more coherent picture seems to be emerging, in which increased risk appears to be linked specifically to heavy use of alcohol. "Heavy use" is defined differently in different studies, but the primary study that establishes an independent association with seroconversion defines it as "four or more drinks every day or six or more drinks on a typical day when drinking in the past six months" (Koblin et al 2006).

Heavy alcohol use is considered a driver for HIV infection in San Francisco for two reasons: (1) heavy use is prevalent (10% or higher) among populations at high risk for HIV, and (2) one study has shown an independent association doubling the risk of HIV acquisition (Exhibit 9). Like with cocaine/crack use, the evidence is not as extensive as it is with other drugs such as methamphetamine, but the HPPC's driver criteria are met. The association between heavy alcohol use and HIV seroconversion was found in the EXPLORE study with MSM, in which all levels of alcohol use were initially found to be associated with seroconversion, but only heavy alcohol use was ultimately found to have an independent association with twice the risk of acquiring HIV during the study (Koblin et al 2006).

### EXHIBIT 9 Data Supporting Heavy Alcohol Use as a Driver of HIV Infection

#### PREVALENCE OF HEAVY ALCOHOL USE IS GREATER THAN 10% AMONG ONE OR MORE HIGH-RISK BRPs

52% of MSM participants reported having 5 or more drinks in one sitting on at least one occasion in the prior 30 days (NHBS 2008).

30% of IDU participants reported having 5 or more drinks in one sitting on at least one occasion in the prior 30 days (NHBS 2005).

#### HEAVY ALCOHOL USE IS INDEPENDENTLY ASSOCIATED WITH HIV INCIDENCE

MSM heavy alcohol users (four or more drinks every day or six or more drinks on a typical day when drinking) were 2.0 times more likely than non-users, light users, and moderate users to seroconvert during the study (Koblin et al 2006).

Additional data supporting the prioritization of heavy alcohol use is worth highlighting, although the following data did not meet the driver criteria because risk behavior is the outcome, not HIV incidence:

- In the EXPLORE study, heavy alcohol use carried with it increased odds of engaging in serodiscordant unprotected sex (Colfax et al 2004).
- In another study, MSM living with HIV who used alcohol before or during sex were 4.7 times more likely to engage in unprotected insertive anal sex with HIV-negative or unknown serostatus partners in the prior three months (Purcell et al 2001).

Other important information related to alcohol use in San Francisco is as follows:

- Alcohol use is the primary drug use issue for 23% of people seeking publicly funded substance use treatment in San Francisco, second only to heroin (see Exhibit 15 under Section III: Cofactors, Substance Use, p. 129).
- High rates of heavy alcohol use have been documented among MSM in San Francisco and else-

where. Among a quasi-probability-based sample of MSM in San Francisco, 52% reported having five or more drinks in one sitting on at least one occasion in the prior 30 days (NHBS 2008).

- Although HIV is rare among teenagers in San Francisco, anecdotally, heavy alcohol use is not, and the HPPC believes that adolescence might represent an ideal time for education and support around alcohol use to prevent HIV risk later in life.

## Methamphetamine

Also called meth, Tina, crystal, crank, fire, glass, speed, or ice, methamphetamine is a stimulant that can be injected, snorted, smoked, swallowed, inhaled ("hot railed"), or inserted into the anus with a syringe that does not have a needle ("booty bumping"). It produces immediate effects including prolonged energy, feelings of euphoria, increased self-confidence, and increased sexual interest and is frequently used in club or party environments. Prolonged use can cause heart problems, brain damage, irritability, hypothermia, aggressiveness, paranoia, anxiety, and hallucinations (Swanson & Cooper 2002). At moderate doses, methamphetamine can prolong erections and thus the length of sexual activity; this can increase HIV risk due to elevated potential for small abrasions for both insertive and receptive partners that provide an opening for the virus to enter, especially during anal intercourse. At high doses, however, it can lead to erectile dysfunction. Methamphetamine is sometimes combined with erectile dysfunction (ED) medications (Mansergh et al 2006, Swarnen & Klausner 2005).

Methamphetamine use is considered a driver for HIV infection in San Francisco because: (1) its use is prevalent (10% or higher) among populations at high risk for HIV, especially MSM and IDU; and (2) one study has shown an independent association with twice the risk for HIV acquisition (Exhibit 10). Rates of methamphetamine use among MSM and IDU in San Francisco are high, ranging from 13% to 20%, depending on the study (Exhibit 10). Rates of methamphetamine use among IDUs may be even higher than among MSM, with over half of IDUs reporting injection of methamphetamine in the past year in one study (NHBS 2005). In another study (Kral et al 2005), 79% of MSM-IDU reported amphetamine injection, although this study did not meet the driver criteria because it was conducted only with MSM-IDU and not the IDU BRP overall.

Regarding its link to HIV incidence, Koblin et al (2006) found that MSM amphetamine users were twice as likely to seroconvert than nonusers (Exhibit 10). Buchacz et al (2005) found that MSM amphetamine users who tested anonymously were more likely to seroconvert than nonusers; however, this study did not meet the driver criteria because the study sample was from only one agency, making it difficult to assess whether findings could be generalized. In this study, the HIV incidence rates were 7.7% among those using methamphetamine during sex, 6.3% among those reporting any methamphetamine use, and 2.1% among non-users. A similar link to seroconversion was found for IDU methamphetamine users vs. non-users (Kral et al 2001).

### EXHIBIT 10 Data Supporting Methamphetamine Use as a Driver of HIV Infection

#### PREVALENCE OF METHAMPHETAMINE USE IS GREATER THAN 10% AMONG ONE OR MORE HIGH-RISK BRPs

23% of San Francisco MSM participants used amphetamines in the 6 months prior to entering the study (Koblin et al 2003).

17% of MSM participants used crystal methamphetamine at least 1 day per month in the past 12 months (Schwarcz et al 2007).

15% of MSM participants used methamphetamine before or during their most recent anal sexual encounter (Mansergh et al 2006).

13% of MSM participants used methamphetamine in the past 12 months (NHBS 2008).

54% of IDU participants reported injecting methamphetamine and 22% reported using non-injection methamphetamine in the past 12 months (NHBS 2005).

#### METHAMPHETAMINE USE IS INDEPENDENTLY ASSOCIATED WITH HIV INCIDENCE

MSM who used amphetamines in the past 6 months were 2.0 times more likely than those who did not use methamphetamine to seroconvert during the study (Koblin et al 2006).

Additional data supporting the prioritization of methamphetamine use is worth highlighting, although the following data did not meet the driver criteria because risk behavior is the outcome, not HIV incidence. The association between methamphetamine use and high-risk sexual behaviors has been extremely well-documented among gay men in San Francisco, where rates of methamphetamine use tend to be higher compared with East Coast cities. Several studies link methamphetamine use with increased odds of unprotected sex among MSM:

- MSM who used methamphetamine at least once per week were 2.0 times more likely than non-users to engage in serodiscordant unprotected anal sex (Colfax et al 2004, Koblin et al 2003).
- MSM who used methamphetamine in the past year were 2.3 times more likely to report unprotected anal sex and 2.5 times more likely to report multiple partners in the past year (Buchacz et al 2005).
- MSM who used methamphetamine before or during their most recent anal sexual encounter were 2.0 times more likely than non-users to report unprotected insertive anal sex, and 2.2 times more likely to report unprotected insertive anal sex with a partner whose HIV status was different/unknown (Mansergh et al 2006).
- HIV-negative MSM who used methamphetamine were 2.8 times more likely than non-users to engage in unprotected receptive anal intercourse with non-primary partners whose HIV status was positive or unknown (Schwarz et al 2007).

Independent associations between methamphetamine use and HIV seroconversion and risk behaviors have been found among IDUs as well as MSM. In one study among heterosexual IDUs, methamphetamine injectors were more likely than non-methamphetamine-injectors to report unprotected vaginal sex in the past six months, five or more sexual partners in the past six months, and syringe sharing in the past 30 days (Kral et al, in press). Among male IDUs, those who used methamphetamine were 4.3 times more likely than non-users to seroconvert. Among female IDUs, those who use methamphetamine were 2.1 times more likely than non-users to seroconvert (Kral et al 2001), although these associations might be explained by other factors (i.e., not independent associations).

Other important information related to methamphetamine use in San Francisco is as follows:

- In 2007/2008, 1,100 people accessed publicly funded substance use treatment in San Francisco for methamphetamine, representing 11% of all people accessing treatment (see Exhibits 15 and 16 under Section III: Cofactors, Substance Use, p. 129, for breakdowns by race/ethnicity).
- Rates of methamphetamine use are especially high among the subgroup of MSM who frequent circuit parties (43%; Colfax et al 2001) and those who "party 'n' play" (54%; Pendo et al 2003). (The vernacular term "party 'n' play," also called PNP, PnP, or even just party, is commonly understood among gay men to mean combining sex with drugs, usually methamphetamine. These terms are often used on websites where gay/bisexual men seek sex partners to indicate a desire for a combination of sex and drugs, particularly methamphetamine.)

## Poppers

Poppers is an overarching term for various alkyl nitrites. Poppers can be made and sold illegally, but most are legal products made for other uses, such as video head cleaner or room deodorizer. They are colorless or yellow liquids with an acrid odor that, when inhaled, cause a fall in blood pressure, an increase in heart rate, and muscle relaxation, among other effects. Use of poppers also leads to euphoria that can reduce inhibitions for some people, increase sexual drive, increase the ability to ejaculate, and intensify the sensations of orgasm. Because poppers relax the muscles, they can help facilitate anal play (e.g., intercourse, fisting). When used in combination with erectile dysfunction (ED) drugs, they can cause serious side effects, including fainting, stroke, or heart attack.

Poppers use is considered a driver for HIV infection in San Francisco for two reasons: (1) use is prevalent (10% or higher) among populations at high risk for HIV, especially MSM; and (2) one study has shown an independent association with twice the risk for HIV acquisition

(Exhibit 11). Rates of poppers use are high among MSM in San Francisco, ranging from 19% to 37%, depending on the study (Exhibit 11). Buchbinder et al (2005) found that MSM who used poppers were 2.2 times more likely to seroconvert than those who did not, and the population attributable risk (i.e., the percentage reduction in HIV incidence that would be observed if the poppers users had not used them) was 28%.

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## EXHIBIT 11 Data Supporting Poppers Use as a Driver of HIV Infection

### PREVALENCE OF POPPERS USE IS GREATER THAN 10% AMONG ONE OR MORE HIGH-RISK BRPs

37% of San Francisco MSM participants used poppers in the 6 months prior to entering the study (Colfax et al 2004, Koblin et al 2003).

26% of MSM participants used poppers at least 1 day per month in the past 12 months (Schwarcz et al 2007).

19% of MSM participants used poppers in the past 12 months (NHBS 2008).

### POPPERS USE IS INDEPENDENTLY ASSOCIATED WITH HIV INCIDENCE

MSM who used poppers in the prior 6 months were 2.2 times more likely than those who did not use poppers to seroconvert during the study (Buchbinder et al 2005).

Additional data supporting the prioritization of poppers use is worth highlighting, although the following data did not meet the driver criteria because risk behavior is the outcome, not HIV incidence:

- One study found that HIV-negative MSM who used poppers were 2.6 times more likely than non-users to engage in unprotected receptive anal sex with people living with HIV or unknown status partners (Schwarcz et al 2007).
- The EXPLORE study, also conducted with MSM, found that high-risk sexual behavior was more common among participants during periods in their lives when they were using poppers (Colfax et al 2005).

## Gonorrhea

The one STI that meets the HPPC's criteria for being a driver is gonorrhea. Chlamydia has also been shown to have links to HIV seroconversion, but the evidence does not rise to the level of a driver. Chlamydia and other STIs, and the ways in which they might increase HIV risk, are discussed in Section III: Cofactors, under STIs (p. 132).

The HPPC found only one study showing gonorrhea prevalence to be greater than 10% in San Francisco. Several studies found either (1) a prevalence of less than 10%; or (2) they could not be considered because of study limitations. The majority of the sample in this one study (Kent et al 2005) were MSM patients from San Francisco City Clinic (the city's STI clinic), which might explain why STI prevalence was over 10% in this study but less than 10% in other studies conducted with broader populations (It should be noted that almost all studies documenting STI prevalence in San Francisco come from data collected at City Clinic, because that is where the vast majority of public STI testing happens.) Therefore, it is unclear whether the community-wide prevalence of gonorrhea is 10% or greater.

Nevertheless, the Kent et al (2005) study has strengths that many other STI prevalence studies do not have: (1) it includes data collected from MSM attending a community-based health clinic, not just City Clinic data, and (2) the data is based on testing, not self-report, and thus is likely more accurate. All things taken into consideration, the HPPC believes that gonorrhea meets the driver criteria, which specified that one study showing 10% or greater prevalence was sufficient evidence to meet the first driver criterion.

Regarding the second criterion of whether STIs are linked to HIV seroconversion, in a review of over 2000 articles on studies conducted throughout the world, the authors concluded that there is "strong evidence" that both ulcerative and non-ulcerative STIs promote HIV transmission by increasing both infectiousness and susceptibility. Risk estimates in the various stud-

ies reviewed ranged from 2.0 to 23.5, with most falling between 2 and 5 (Fleming & Wasserheit 1999). The following section discusses the evidence specific to gonorrhea.

Gonorrhea is a bacterial STI. It can be transmitted through vaginal, anal, or oral sex. It can go undiagnosed because not all people have symptoms. Gonorrhea can cause tissue inflammation, which may increase biological susceptibility for acquiring or transmitting HIV infection. It is treatable with antibiotics.

Gonorrhea is considered a driver for HIV infection in San Francisco for two reasons: (1) its prevalence was found to be greater than 10% in one study among MSM; and (2) one study found an independent association with a doubling of HIV incidence (Exhibit 12). Additional supporting evidence, although it did not meet the driver criteria, is as follows:

- In one study, MSM with newly diagnosed HIV infection were more likely than HIV-negative men to be co-infected with gonorrhea (25.9% vs. 10.9%; Scott et al 2008).
- MSM with a recent HIV infection were 5.0 times more likely to be infected with gonorrhea in an analysis performed with patients at the city's STI clinic (King et al 2003). (This study did not meet driver criterion #2 because the data was from only one agency, which was a disqualifying factor.)

## EXHIBIT 12 Data Supporting Gonorrhea as a Driver of HIV Infection

### PREVALENCE OF GONORRHEA IS GREATER THAN 10% AMONG ONE OR MORE HIGH-RISK BRPs

14% of gay/bisexual men attending San Francisco's City STI Clinic or a community-based gay men's health center had rectal, urethral, and/or pharyngeal gonorrhea (Kent et al 2005).

### GONORRHEA IS INDEPENDENTLY ASSOCIATED WITH HIV INCIDENCE

MSM with self-reported gonorrhea in the prior six months were 2.5 times more likely to seroconvert during the study compared with those without gonorrhea (Koblin et al 2006).

Increased risk for gonorrhea in San Francisco is found primarily in two populations, MSM and adolescents aged 14 to 20 years, but is only a driver of HIV among MSM. In 2007, 1,032 cases of gonorrhea were reported among MSM, representing 60% of total cases among males. The rate of gonorrhea among MSM is estimated at 1,607.2 per 100,000, compared with 209.0 per 100,000 for other men. Rates by race/ethnicity are provided in Exhibit 13. In 2007, 65% of gonorrhea cases among MSM in San Francisco were among Whites, 17% among Latinos, 9% among African Americans, and 7% among APIs. These trends were stable between 2003 and 2007. The median age of MSM diagnosed with gonorrhea in 2007 was 36 years old. In 2007, 40% of MSM with known HIV status who were diagnosed with gonorrhea were living with HIV (SFDPH STD Prevention and Control, special data request, January 2009).

In 2007, gonorrhea rates among adolescents were 20% higher than the rates among adults older than 21 years. A substantial decline was seen from 2006 to 2007, but it is too early to determine whether this trend will continue. Males and African Americans are extremely disproportionately affected, especially those living in Bayview, Potrero Point, Sunnydale, Hunter's Point, and Western Addition (SFDPH STD Prevention and Control, special data request, January 2009). Fortunately, a corresponding HIV epidemic has not emerged in non-MSM youth under 21, and thus gonorrhea is not a driver of HIV infection in this group. (For more on HIV among youth, see the section on Youth, p. 106).

EXHIBIT 13 Gonorrhea Rates per 100,000 Population,  
July 2007 to June 2008

	AFRICAN AMERICAN	ASIAN AND PACIFIC ISLANDER	LATINO	NATIVE AMERICAN*	WHITE	OVERALL
MSM	1,730.3	693.0	1,628.4	10	2,035.4	1,607.2
Other Males	733.0	41.0	144.5	<5	155.9	209.0
Females	445.1	11.7	62.0	<5	34.7	74.4

Source: SFDPH STD Prevention and Control, special data request, January 2009.

Note: This exhibit includes rectal gonorrhea cases, explaining the higher rates for males in most racial/ethnic groups. STI rates for transpersons cannot be included due to lack of data on population size and inconsistent reporting of trans identity. Nine cases of gonorrhea were reported among transpersons during this time period.

\*Case counts are presented for Native Americans instead of rates due to small sample size. Native Americans may be undercounted due to misclassification.

**MULTIPLE PARTNERS**

There is no judgment associated with having multiple partners, which in itself does not increase HIV risk if all encounters are protected and there is no condom failure. Rather, it is multiple unsafe sexual encounters that increases a person's HIV risk, and multiple partners can be an indicator of this. For a person who does not use condoms 100% of the time, the higher the number of sexual partners s/he has, the more likely s/he is to be exposed to and acquire HIV simply based on odds, particularly if his or her sexual networks have high HIV prevalence. Consistent and proper use of condoms can greatly reduce this risk.

Even though other drivers and cofactors (such as methamphetamine use, finding partners on the Internet, and sex work) might be synergistically related to number of partners, several studies suggest that having multiple partners is an independent risk factor for HIV (Buchbinder et al 2005, Clements-Nolle et al 2001, Koblin et al 2006, Plankey et al 2007), although not all meet the HPPC's driver criteria. In this section, the term "multiple partners" is defined as more than one partner during a given time period, but the relationships between multiple partners and HIV are more complex than that. The studies mentioned in this section generally describe their findings in categories (e.g., 1 partner, 2-5 partners, 6-10 partners, more than 10 partners), as opposed to single partner vs. multiple partners.

Having multiple partners is considered a driver for HIV infection in San Francisco for two reasons: (1) the high prevalence (more than 10%) of having multiple partners among populations at high risk for HIV; and (2) one study reported that having multiple partners was independently associated with more than twice the risk of HIV seroconversion. Regarding the prevalence of multiple partners, several studies among MSM and transfemales document reports of more than one partner in the prior six months (Buchbinder et al 2005, Clements-Nolle et al 2001, Courtenay-Quirk et al 2007, Koblin et al 2003, Koblin et al 2006, NHBS 2005, NHBS 2008, Schwarcz et al 2007) and three of these meet the driver criteria (see Exhibit 14 for studies). An additional study documents the more than twofold increased risk of seroconversion with multiple partners, and the effect is more pronounced when unprotected receptive anal sex with multiple partners is the outcome (not just multiple partners) (Plankey et al 2007).

## MORE THAN 10% OF ONE OR MORE HIGH-RISK BRPs REPORT MULTIPLE PARTNERS

58% of MSM participants reported having more than one sex partner in the past 6 months (NHBS 2008).

51% of IDU participants reported having more than one sex partner in the past 6 months (NHBS 2005).

37% of transfemales reported more than 10 anal, vaginal, or oral sex partners in the past 6 months (Clements-Nolle et al 2001).

## HAVING MULTIPLE PARTNERS IS INDEPENDENTLY ASSOCIATED WITH HIV INCIDENCE

MSM with two to four partners were 2.9 times more likely to seroconvert than those with no partners. MSM with five or more partners were 2.5 times more likely to seroconvert than those with no partners. In addition, MSM with two to four unprotected receptive anal sex partners were 5.3 times more likely to seroconvert than those with no unprotected receptive anal sex partners. MSM with five or more unprotected receptive anal sex partners were 9.3 times more likely to seroconvert than those with no unprotected receptive anal sex partners.\* (Plankey et al 2007)

\*This study was done with MSM from Baltimore/Washington DC, Chicago, Los Angeles, and Pittsburgh.

Additional data supporting the prioritization of multiple partners is worth highlighting, although the following studies did not meet the driver criteria:

- Schwarcz et al (2007) found that MSM with one to five partners were significantly less likely to engage in serodiscordant unprotected sex compared with those reporting six or more partners, indicating that risk may increase as the number of partners increases.
- Courtenay-Quirk et al (2008) found that HIV-positive gay and bisexual men with multiple partners were 2.8 times as likely to engage in serodiscordant unprotected anal sex, but these odds were reduced to 1.7 when controlling for other factors. It is noteworthy that this same study also found increased odds of engaging in serodiscordant sex among heterosexual men living with HIV who have multiple partners, which could contribute to new HIV infections among IDU and non-IDU females, but the evidence does not rise to the level of a driver.
- Koblin et al (2006) found that, even when controlling for other factors such as drug use, MSM with four or more partners were 1.5 to 1.8 times more likely to seroconvert compared with MSM with fewer than four partners.

# SECTION III Cofactors

## INTRODUCTION

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Cofactors, along with drivers and primary risk behaviors (such as sharing needles and having unprotected sex), are critical considerations in HIV prevention planning and implementation. There are two ways in which a cofactor can increase susceptibility to HIV infection: (1) the cofactor motivates or increases the likelihood of engaging in a risk behavior (e.g., low self-esteem, sex work); or (2) the cofactor increases the likelihood of contracting HIV if exposed (e.g., presence of an STI). Drivers, which are discussed in a previous section, are “super cofactors” that are associated with large numbers of new HIV infections in San Francisco. The cofactors discussed in this section are different than drivers because, while they might increase an individual’s chance of becoming HIV-infected if exposed, they are not associated with a large portion of new HIV infections and are not necessarily independently associated with HIV infection. (For more on drivers, see Section II: Drivers, p. 115)

### Definition of a Cofactor

**A condition that can increase risk for HIV, increase susceptibility to infection, or decrease ability to receive and act upon HIV prevention messages.**

Individuals are complex beings with many internal and external circumstances that affect them. Individuals and communities may be affected by multiple cofactors at the same time. In fact, cofactors such as poverty, discrimination, and substance use are interrelated and tend to occur in clusters. The roots of many of these cofactors are policy-related and structural. For example, the lack of affordable housing is directly linked to homelessness, sex work, and substance use, all of which affect HIV risk. While it is important to address these cofactors at the individual level when doing HIV prevention, the implications of policy as well as the historical and environmental causes of the cofactors must also be considered.

It should be noted that although there are a number of cofactors presented here, many of them have their roots in one issue – poverty and income disparities (see p. 142). Health and disease are not equally distributed in society, and public health studies have documented a greater burden of morbidity and mortality among low-income communities across a wide range of health issues. Homelessness, incarceration, sex work, and a multitude of other issues that affect HIV risk have their roots in poverty. The HPPC believes that elimination of poverty would go a long way toward stopping the HIV epidemic, both locally and nationally. It should be acknowledged that, in San Francisco, eradicating poverty may not stop the HIV epidemic altogether. Middle and upper income individuals in San Francisco are also at risk for HIV and experience many of the same cofactors as people living in poverty, including substance use and mental health issues.

The cofactors presented in this section are not exhaustive. Furthermore, not all are prioritized (see Chapter 3: Priority Setting, p. 163, for the prioritized cofactors). Providers are encouraged to determine if additional cofactors are relevant for their specific priority populations. HIV prevention programs must have an approach to addressing the cofactors that are important in the communities they serve, either within the program or through linkages and referrals to appropriate services.

## SUBSTANCE USE

### Why Is Substance Use an Important Cofactor?

Certain substances have been identified as drivers of HIV in San Francisco (see p. 115). This section discusses how substance use in general is a cofactor for HIV infection, as well as the specific substances that do not meet the HPPCs criteria for drivers, but are still believed to be cofactors.

Substance use is believed to be responsible for a large proportion of new HIV infections in the U.S. One study found that drug use behaviors, both injection and non-injection, account for 32% of new HIV diagnoses nationally (Santibanez et al 2006). Drug and alcohol use can affect risk for HIV in many different ways, depending on the drug, the dose, the mode of administration, the context, and other factors. In general, there are three different ways substances can increase a person's risk for acquiring or transmitting HIV:

- **Sharing needles used to inject drugs.** Using a needle that has already been used by a person living with HIV increases the risk for HIV transmission.
- **Psychological/behavioral effects.** Euphoria, increased libido, increased sense of invulnerability, and increased confidence are a few of the psychological effects of recreational substances. The altered mental state can affect a person's sexual decision-making (e.g., whether or not to have sex, whether to use condoms, whether to discuss HIV status with a potential partner, whether to share needles). Several drugs have been associated with high-risk behaviors resulting from these psychological effects, including increases in unprotected anal sex, increases in number of partners, and sharing needles. Those who are dually diagnosed with both mental health and substance use issues may be at even greater risk for acquiring or transmitting HIV; for example, in one study, dually diagnosed individuals were more likely to have shared needles, have had sex in exchange for money or gifts, and have had sex with an injection drug user, than those with a substance abuse diagnosis alone (Dausey & Desai 2003).
- **Biological effects.** Although the direct effects of drugs on HIV transmission remain to be determined, many recreational drugs cause vasodilation, prolonged erection, smooth muscle relaxation, decreased pain, and increased sexual desire which may increase HIV risk. For example, sex that lasts longer due to prolonged erection or decreased sensations of pain could result in tissue damage, providing an opening for HIV to enter the bloodstream. In addition, long-term substance use may alter immune functioning, increasing susceptibility to HIV infection.

The specific relationships between various substances and HIV risk behavior has been documented in many studies throughout the U.S. and in San Francisco. HIV risk among MSM has been clearly linked with recreational drug use in multiple studies (see the section on Gay Men, p. 66). One MSM study concluded that use of alcohol or drugs before sex accounted for nearly one third (29%) of the new infections observed over the course of the study, supporting the notion that addressing substance use is critically important for HIV prevention (Koblin et al 2006).

### Substances That Can Affect HIV Risk

There are four substances that are considered drivers for HIV infection in San Francisco: cocaine/crack, alcohol (heavy use), methamphetamine, and poppers. These are described in detail in Section II: Drivers, under Substance Use (p. 116). The following paragraphs discuss other drugs that might affect risk for HIV, but are not believed to be responsible for a substantial portion of new HIV infections in San Francisco.

**Erectile dysfunction (ED) drugs.** ED drugs, which include Viagra (generic name sildenafil), Cialis (generic name tadalafil), and Levitra (generic name vardenafil), are prescription treatments for erectile dysfunction. When discussing this class of drugs generally, this section will refer to "ED drugs." When referring to findings from a particular study, the brand name of the drug studied will be used. All studies presented here to support ED drug use as a cofactor of HIV infection are based on Viagra use. ED drugs are discussed in more depth than the other

substances, because there is substantial evidence of their relationship with HIV risk, although the evidence does not quite rise to the level of a driver.

ED drugs work by increasing blood accumulation in the penis during sexual arousal and slowing the subsiding of erection after ejaculation. Although they have legitimate medical uses (specifically, treatment of erectile dysfunction, which is not uncommon among people living with HIV and older men), in the past several years, ED drugs have become more common as recreational drugs among gay men and are used in combination with other drugs such as ecstasy and methamphetamine to enhance sexual functioning and prolong pleasure. In extending the period of time a man can maintain an erection, ED drugs allow men to have sex for longer, and potentially with more than one partner, which can lead to increased opportunities for HIV transmission. Because of their popularity, they have become readily available without a prescription, through friends and on the Internet.

Relevant findings showing the high prevalence of ED drug use among MSM (and to a lesser extent among IDUs) and linking ED drug use to HIV risk include:

- Three studies document high rates of Viagra use among high-risk populations: 28% in the past 12 months among MSM (Schwarcz et al 2007), 22% in the past 12 months among MSM (NHBS 2008), and 11% in the past 12 months among IDU males (NHBS 2005).
- Among repeat testers at one agency, those who reported using Viagra in the past 12 months were 2.5 times more likely to seroconvert than those who did not use it (Loeb et al 2004).
- MSM who used Viagra before or during their most recent anal sexual encounter were 6.6 times more likely than those who did not use Viagra to report unprotected insertive anal sex, and 29.2 times more likely to report unprotected insertive anal sex with a partner whose HIV status was different/unknown (Mansergh et al 2006).
- In a review article of studies on Viagra use published between 1999 to 2004, MSM who used Viagra were 2.0 to 5.7 times more likely than those who did not use Viagra to engage in unprotected anal sex with a partner of unknown or discordant HIV status (Swearingen & Klausner 2005). (Eight of the 14 studies reviewed were conducted in San Francisco.)

**Heroin.** Heroin, which can be smoked, snuffed, or injected, causes users to feel an intense surge of pleasure, usually accompanied by warm flushing of the skin and dry mouth. Heroin is a very effective pain killer as well. Heroin users are at risk for life-threatening overdoses when it is injected (Ochoa et al 2001). Use of "speedballs" (combinations of heroin and cocaine or speed) has been associated with HIV infection (Kral et al 1998). The primary HIV risk associated with heroin is the sharing of needles, as opposed to sexual risk, because heroin can inhibit erections in men and lubrication in women and can reduce sex drive overall.

**Ecstasy.** Ecstasy (methamphetamineylenedioxymethamphetamine, or MDMA) also known on the street as X, E, Adam, or Hug Drug, is an amphetamine-like substance with stimulant and hallucinogenic properties. It reduces inhibition and leads to feelings of empathy for others and deep relaxation. In some studies, ecstasy has been associated with unprotected sex among MSM (Klitzman et al 2002). Frequently, ecstasy is combined with other drugs, such as ketamine, cocaine, methamphetamine, and ED drugs to produce countering effects. Prolonged usage of ecstasy may cause memory impairments, depression, and anxiety (Swanson & Cooper 2002). Use of ecstasy during sex has been linked to acquiring drug-resistant HIV in one study (Gorbach et al 2008).

**Other recreational drugs.** Other recreational drugs, such as hallucinogens, gamma-hydroxybutyrate (GHB), and ketamine (Special K) are very popular among gay men during circuit party weekends, raves, and in public sex environments, such as bathhouses and public cruising areas. They have been shown to be associated with increased high-risk sexual practices, especially among gay and bisexual men (Purcell et al 2005b; see also the section on Gay Men, p. 66). Use of GHB during sex has been linked to acquiring drug-resistant HIV in one study (Gorbach et al 2008). Use of ketamine has been associated with use of ED drugs, in particular, Viagra (Purcell et al 2005a).

**Hormones.** Nationally, sharing needles while injecting hormones to increase female or male secondary sexual characteristics has been shown to be a risk behavior among trans populations. However, the availability of hormone needles at needle exchange sites in San Francisco accounted for low rates of needle sharing among hormone users locally in the 1990s (Clements-Nolle et al 2001). More recent studies are needed to determine whether this finding still holds true.

**Steroids.** HIV risk behaviors documented among anabolic-androgenic steroid users include needle sharing, sharing of multi-dose vials, and dividing drugs using unsterile syringes (Midgley et al 2000). HIV infections are not as common among steroid users as other IDUs, but some studies have shown that high-risk behaviors do occur among steroid users (Rich et al 1999).

**Marijuana.** Marijuana, also called pot or weed, is usually smoked but can be eaten. Only a handful of studies have found links between marijuana use and HIV risk behaviors (Celentano et al 2006, Collins et al 2005), but generally these associations become less strong or disappear when controlling for other factors. For example, one study found that gay men who seroconverted were more likely to have used marijuana than others, but they were also more likely to have used poppers and speed, which have strong associations with HIV risk (Chesney et al 1998). Marijuana use has been linked to discontinuation of HAART use, however, which could increase a person's infectiousness (Clementes-Nolle et al 2008b). MSM may be more likely to use marijuana weekly than heterosexual men (Woody et al 2001), and methamphetamine/edone users are more likely than non-users to use pot (Lollis et al 2000).

## Who Is Affected by Substance Use in San Francisco?

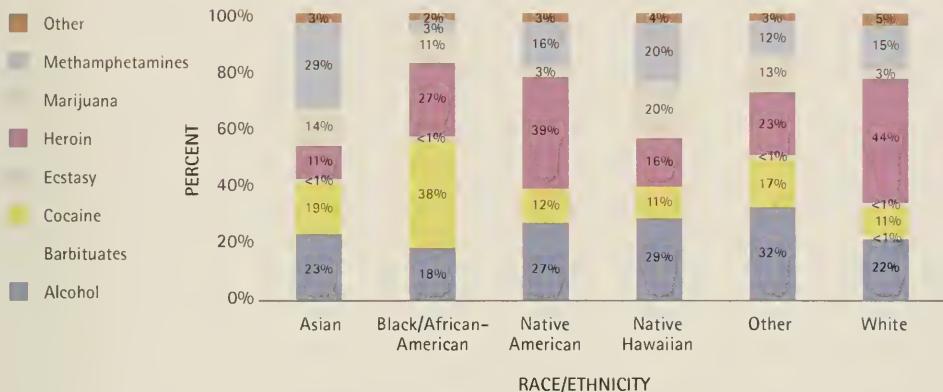
Substance use affects people of all races, ages, and genders. According to an article that summarized multiple studies from different locales, lesbian, gay, and bisexual women and men, as well as trans individuals, appear to have greater substance use issues than heterosexual populations (<http://www.soberrecovery.com/drug-rehabilitation-alcohol-treatment/addiction-treatment/the-epidemiology-of-substance-abuse-among-the-lgbt-population.html>), which may affect HIV risk. Substance use also affects heterosexual men and women and adolescents in San Francisco, particularly homeless and runaway youth (Van Leeuwen et al 2004).

Community-wide data on rates of substance use are lacking, but data on people accessing publicly funded treatment exists (Exhibits 15 and 16). This data suggests that some populations are disproportionately affected by substance use, including men, African Americans, and Native Americans. These racial/ethnic groups may be even more profoundly affected than treatment data would suggest, because these groups might experience barriers to accessing treatment and thus would not be represented in these data (see also the section on Access to Health and Social Services, p. 144).

Overall, heroin is the drug for which the largest number of people are in treatment in San Francisco, followed by alcohol and cocaine. Together, these three drugs account for 77% of people in publicly funded treatment. The primary drug addiction for which individuals are receiving treatment differs by race/ethnicity (Exhibits 15 and 16). African Americans have the highest rates of treatment for cocaine use (38%), Asians have the highest rates of treatment for methamphetamine use (29%), Latinos have the highest rates of treatment for alcohol use (32% across all Latino subgroups) and Whites have the highest rates of treatment for heroin use (44%). Differences among populations in the type of drug used should be taken into account when designing prevention programs and building linkages to appropriate services.

## EXHIBIT 15 Primary Drug Use Issue Upon Admission to SFDPH Substance Use Treatment by Race, July 2007–June 2008

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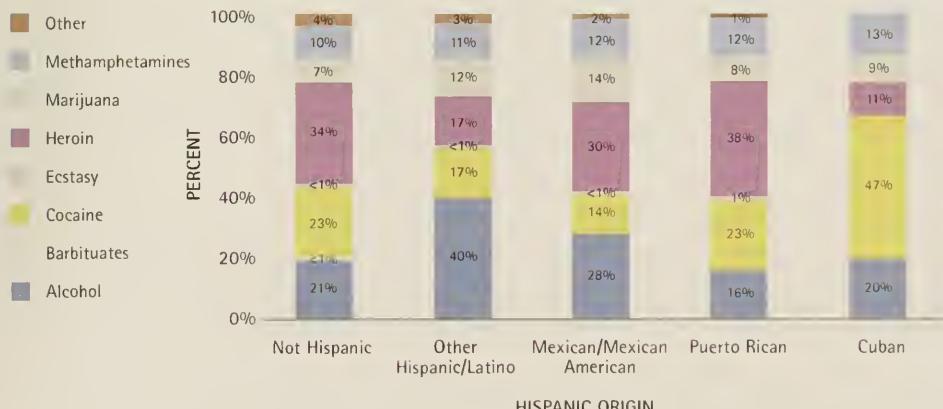


Note: Includes only Community Behavioral Health Services clients receiving the following services: outpatient, residential/residential detox, outpatient methamphetamine/detox, outpatient methamphetamine maintenance, and day treatment.

Note: Cocaine also includes crack.

Note: Pacific Islanders are included in Asian or other category based on the discretion of the interviewer.  
Source: Community Behavioral Health Services, SFPDH, special data request, December 2008.

## EXHIBIT 16 Primary Drug Use Issue Upon Admission to SFDPH Substance Use Treatment by Hispanic Origin, July 2007–June 2008



Note: Includes only Community Behavioral Health Services clients receiving the following services: outpatient, residential/residential detox, outpatient methamphetamine/detox, outpatient methamphetamine maintenance, and day treatment.

Note: Cocaine also includes crack.

Note: Pacific Islanders are included in Asian or other category based on the discretion of the interviewer.  
Source: Community Behavioral Health Services, SFPDH, special data request, February 2008.

## Why Is Mental Health An Important Cofactor?

### MENTAL HEALTH

Mental health stressors may be episodic or chronic conditions and include anxiety, depression, schizophrenia, and bipolar disorder. Stresses on mental health functioning influence thought and decision-making processes, can hinder physical functioning, and can increase risk for HIV infection. Making decisions to engage in high-risk sexual or drug use behaviors may be made on an unconscious level for people who experience low-self esteem, anxiety, depression, sexual abuse, or post-traumatic stress disorder. Studies have documented links between mental health issues and increased rates of high-risk sex or HIV positivity rates among gay and bisexual men (Stall et al 2002, Wolitski et al 2004). Therefore, it is often important to address mental health issues in the context of HIV prevention.

Overall, HIV risk may be elevated among individuals with certain psychological disorders (e.g., poor impulse control), the chronically mentally ill, those with a history of childhood sexual abuse, and other conditions. In San Francisco, mental health issues affect people from all racial/ethnic backgrounds and socioeconomic status. People with few financial and social resources, however, might experience more serious consequences from having a mental health issue, including homelessness and poverty, which are also linked to HIV risk.

## Mental Health Issues That Affect HIV Risk

### Depression, isolation, loneliness, and low self-esteem.

Depression and low self-esteem have been shown to be associated with high-risk behavior among several groups, including substance users and those who experience poverty, homelessness, discrimination, marginalization, and grief or loss. Because individuals from disenfranchised communities, such as IDUs, gay/bisexual/transpeople, homeless persons, and racial/ethnic minority communities experience many of these circumstances, they might be more likely to have depression or low self-esteem. The link between depression, low self-esteem, and HIV risk has been particularly well-documented among trans populations and MSM (Paul et al 2002). Isolation and loneliness can also affect a person's sexual decision-making. For example, MSM might fear sexual rejection if they disclose their HIV status to a potential partner, and so they choose non-disclosure (Sheon & Crosby 2004). Finally, experiencing discrimination or stigma due to sexual orientation or HIV status can have detrimental effects on mental health and has been shown to be linked to HIV risk behaviors (Courtenay-Quirk et al 2006).

Two analyses concluded that the preponderance of studies does not show an association between depression or negative affect and high-risk behavior (Crepaz & Marks 2001, Koblin et al 2006). Regardless, HIV risk behaviors, substance use, and depression might be "syndemic" – in other words, occurring simultaneously and having synergistic effects with respect to the likelihood of HIV seroconversion (Raymond 2009).

**Social support.** Social support and social networks might affect a person's health-related and risk-taking behavior, either positively or negatively. In terms of social support's effect on HIV risk, it is tentatively suggested that the issue is less social support *per se* and more the norms of the support network. Those support networks that emphasize healthy behaviors are more likely to help people reduce their risk for HIV.

**History of childhood sexual abuse.** A history of childhood sexual abuse is associated with living with HIV and with greater HIV risk behavior later in life. The ways in which such abuse may be linked to increased risk of acquiring HIV are: (1) transmission may occur during the unwanted sexual act; (2) a history of sexual abuse may be related to subsequent HIV risk behaviors or cofactors, such as substance use, injection drug use, needle sharing, commercial sex work, unprotected sex, multiple sex partners, and mental health issues; and (3) a history of sexual abuse may impede a person's ability to respond to HIV prevention education and engage in HIV preventive behaviors. Several studies have documented links between childhood sexual abuse and higher levels of substance use or HIV risk behavior among MSM, women, and non-MSM (Relf et al 2004, O'Leary et al 2003, Saylor & Dalipathy 2005, Stall et al 2001). Urban MSM may be more frequently affected than other groups (Greenwood et al 2002).

**History of abusive relationships.** A history of childhood sexual abuse, described in the previous section, may predispose involvement in adult abusive relationships (either physically or sexually abusive), and these abusive relationships themselves also might affect HIV risk behavior. The ways in which having a history of abusive relationships may be linked to increased risk of acquiring HIV are: (1) transmission may occur during abusive sexual acts, and (2) a history of abusive relationships may be related to subsequent HIV risk behaviors or cofactors, such as homelessness among women, inability to negotiate condom use or safer sex, and learned helplessness. This issue is particularly salient for women (Saylor & Dalipathy 2005).

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**History of rape.** Rape is any sexual assault or forced sexual encounter regardless of the type of contact or relationship to perpetrator. HIV transmission may occur during the rape. It is more likely that the rape survivor might experience post-traumatic stress, depression, and feelings of powerlessness, which can all contribute to a decreased sense of self-efficacy, which in turn could affect the survivor's ability to engage in HIV self-protective measures after the assault. For example, women who have experienced rape are more likely to have exchanged sex for money or drugs, have had a greater number of sex partners, and have had more unprotected sex (Parillo et al 2001). While anyone may be a potential target for rape, women, homeless women, commercial sex workers, substance users (especially crack), incarcerated men, and men appearing vulnerable are more likely to be targeted.

## Who Is Affected by Mental Health Issues in San Francisco?

Mental health issues affect people of all racial/ethnic backgrounds and socioeconomic statuses. Comprehensive data on the prevalence of specific mental health issues among various San Francisco populations does not exist. It is estimated that approximately 13% of San Francisco adults sought mental health care in 2005 (<http://www.healthmattersinsf.org>). In fiscal year 2007/2008, there were 7,257 emergency psychiatric visits within the SFDPH (SFDPH 2008b).

The best general data source available on mental health includes demographics of those in treatment with county service providers, although this data is not necessarily reflective of the true distribution of mental health issues because different populations have different levels of access to treatment and some may be in private treatment. Nevertheless, this data offers a tentative picture of who is affected by mental health issues in San Francisco.

Exhibit 17 shows the distribution of those in publicly funded treatment facilities (inpatient and outpatient) by race/ethnicity. African Americans are disproportionately represented among those in treatment compared with the population size in San Francisco. In addition, men represent a greater percentage of those in treatment compared with women (53% vs. 47% for adults, 63% vs. 37% for youth; SFDPH 2008b).

### EXHIBIT 17 Number of Individuals Receiving Mental Health Services Through SFDPH, By Race, July 2007 – June 2008

RACE/ETHNICITY	NUMBER	PERCENT*
African American	5,881	24%
Asian	4,620	19%
Native Hawaiian or Other Pacific Islander	238	1%
Latino	3,807	16%
Native American	246	1%
White	8,688	36%
Multiracial/Other	378	2%
Unknown	457	2%
<b>TOTAL</b>	<b>24,315</b>	<b>100%</b>

Source: Community Behavioral Health Services, SFDPH, special data request, December 2008

\*Percent does not total 100 due to rounding

## SEXUALLY TRANSMITTED INFECTIONS

### Why Are STIs An Important Cofactor?

One STI – gonorrhea – has been identified as a driver of HIV in San Francisco (see p. 121). This section discusses how STIs in general are a cofactor for HIV infection, as well as the specific STIs that do not meet the HPPC's criteria for drivers, but are still believed to be cofactors.

The presence of an STI other than HIV is an indicator of risk for HIV infection because STIs and HIV are transmitted in the same way (via sex). Perhaps more importantly, certain STIs, especially ulcerative STIs such as syphilis or herpes, may increase a person's biological risk for acquiring or transmitting HIV for a number of reasons, including that ulcers may serve as a point of exit or entry for HIV.

STI screening and treatment also offer key opportunities for HIV prevention because those at risk for STIs are also at risk for HIV. Overall, greater integration of HIV and STI detection and treatment services is needed. When delivering HIV prevention interventions, STIs should also be discussed and appropriate tests offered and provided, and vice versa.

### STIs That Can Indicate or Affect HIV Risk

**Gonorrhea.** Gonorrhea is the only STI that is considered a driver for HIV infection in San Francisco. It is described in detail in Section II: Drivers, under STIs (p. 121). The following paragraphs discuss other STIs that might indicate or affect risk for HIV, but are not believed to be responsible for a substantial portion of new HIV infections in San Francisco.

**Chlamydia.** Chlamydia is a bacterial STI. It can be transmitted through vaginal, anal, or oral sex. It often goes undiagnosed because many people have no symptoms. Chlamydia can cause inflammation of the mucosal tissue of the genital tract (Royce et al 1997), which may increase biological susceptibility for acquiring HIV infection. Chlamydia can also increase shedding of the HIV virus in people living with HIV which could increase the likelihood of transmission (Johnson & Lewis 2008). It is treatable with antibiotics.

Studies show that chlamydia is prevalent among MSM populations, and some associations have been found between chlamydia and HIV incidence, although the evidence does not rise to the level of a driver:

- 10.2% of gay/bisexual men attending San Francisco's City STD Clinic or a community-based gay men's health center had rectal, urethral, and/or pharyngeal chlamydia (Kent et al 2005).
- Among MSM seeking HIV testing at San Francisco's City STD Clinic, those with a recent HIV infection were 3.7 times more likely to be infected with chlamydia (King et al 2003).
- MSM with newly diagnosed HIV infection were more likely than HIV-negative men to be co-infected with chlamydia (18.5% vs. 7.8%; Scott et al 2008).

**Syphilis.** Syphilis is a bacterial STI, of which the first symptom is usually a painless sore where the infection entered, called a chancre. The presence of a chancre may increase the biological risk for HIV transmission; syphilis lesions are associated with an increased risk of HIV transmission by two to five times (Renzi et al 2003). If left untreated, syphilis can result in blindness, paralysis, insanity, and death in its later stages, which usually occur decades after infection. Syphilis can be cured with antibiotics. Beginning in 2001-2002, San Francisco saw a resurgence of early syphilis among MSM, which then declined (SFDPH 2007) only to resurge again beginning in 2008.

**Hepatitis B.** Hepatitis B is a viral infection transmitted primarily through sex, but also through sharing of injection equipment or other blood-to-blood contact. Symptoms can include fever, nausea, fatigue, abdominal pain, and jaundice. Most people recover completely within six months, but 5% to 10% of people develop chronic hepatitis B, which can lead to liver disease later in life. A highly effective vaccine is available, and safer sex and injection practices can also contribute to prevention (SFDPH 2008a). All persons at risk for HIV should be vaccinated for hepatitis B.

**Hepatitis C.** Hepatitis C is a viral infection transmitted primarily through blood-to-blood contact, such as during sharing of injection equipment, although there is growing evidence that some hepatitis C is transmitted through sexually associated activity, especially among HIV-positive MSM (see [http://www.natap.org/2009/CROI/croi\\_62.htm](http://www.natap.org/2009/CROI/croi_62.htm) for several studies on this topic). Hepatitis C is highly prevalent among IDUs, as is coinfection with HIV and hepatitis C. Hepatitis C can have similar symptoms as hepatitis B, but often it is asymptomatic. Some people recover from hepatitis C within six months, but 80-85% become chronic carriers, meaning they are still infectious but may or may not feel sick. Chronic hepatitis C can lead to liver disease later in life. There is no vaccine; behavioral prevention measures, including safer injection practices, safer sex practices, and reduction of blood exposure during sexually associated activity are recommended for prevention (SFDPH 2008a).

**Herpes.** Herpes is a treatable (but not curable) viral STI. Ulcers caused by herpes are very infectious and may increase HIV transmission risk. Herpes can also be passed on even when sores are not present. Having herpes was associated with 1.8 times increased risk for HIV among MSM in one study (Renzi et al 2003). Genital herpes rates may also be high in certain subpopulations. For example, 76% of heterosexual women who used methamphetamine in one San Francisco-based study screened positive for herpes (Lorvick et al 2008). Recent research demonstrates that herpes suppression treatment does not reduce the risk of HIV (Celum et al 2008).

**Genital warts.** Genital warts are a viral STI caused by the human papilloma virus (HPV). Not all people with HPV develop visible warts. HPV and warts are spread through skin-to-skin-contact. In one study, MSM with HPV had more than a threefold increased risk of becoming HIV-positive during the course of the study (Chin-Hong et al 2005).

**Trichomoniasis.** This STI is often referred to as "trich" and is caused by a parasite. In men, it is usually found in the urethra and in women it is usually found in the vagina. Having no symptoms is common, especially for men. It can be cured with medication. Trich can cause inflammation of the genital tract in women, which might make them more susceptible to HIV infection. In one study conducted in Kenya, women with trich were 1.5 times more likely to seroconvert to HIV during the study period (McClelland et al 2007). Trich is of concern for some subpopulations in San Francisco. For example, heterosexual methamphetamine-using women had a 23% prevalence of trich in one study (Lorvick et al 2008).

## Who Is Affected by STIs in San Francisco?

All populations are at risk for STIs in San Francisco, but different groups are more profoundly affected depending on the STI.

**Gonorrhea.** Data and a detailed discussion of gonorrhea in San Francisco populations are presented in the Section II: Drivers, p. 121.

**Chlamydia.** Increased risk for chlamydia in San Francisco is found primarily in two populations, MSM and adolescents aged 14 to 20 years. Among MSM, the chlamydia rate overall in 2007 was estimated at 1,406.9 per 100,000 compared with 253.4 per 100,000 among other males. Rates by race/ethnicity are provided in Exhibit 18. Over half of the chlamydia cases reported among MSM were among Whites (61%), with 21% among Latinos, 10% among APIs, and 8% among African Americans. These trends were stable between 2003 and 2007. The median age of MSM diagnosed with chlamydia in 2007 was 37 years old. Forty-three percent of MSM with known HIV status who were diagnosed with chlamydia in 2007 were HIV-positive (SFDPH STI Prevention and Control, special data request, January 2009).

In 2007, chlamydia rates among adolescents were over four times higher than the rates among adults over 21 years. Females and African Americans are extremely disproportionately affected, especially those living in West Hunter's Point and Sunnydale (SFDPH STI Prevention and Control, special data request, January 2009). Among non-MSM youth, substantial new HIV infections have not materialized even with such high STI rates, possibly because HIV prevalence

in youth sexual networks is very low. (For more on HIV among youth, see the section on Youth, p. 106.)

**EXHIBIT 18 Chlamydia Rates per 100,000 Population by Race and Gender/Risk, San Francisco, July 2007 to June 2008**

	AFRICAN AMERICAN	ASIAN AND PACIFIC ISLANDER	LATINO	NATIVE AMERICAN*	WHITE	OVERALL
MSM	1,123.6	766.8	1,609.9	6	1,705.0	1,406.9
Other Males	1,348.4	118.3	301.8	5	225.7	253.4
Female	1,695.4	242.2	540.2	9	142.6	492.0

Source: SFDPH STD Prevention and Control, special data request, January 2009.

Note: STI rates for transpersons cannot be included due to lack of data on population size and inconsistent reporting of trans identity. Less than 5 cases of chlamydia were reported among transg people during this time period.

\*Case counts are presented for Native Americans instead of rates due to small sample size. Native Americans may be undercounted due to misclassification.

**Syphilis.** Exhibit 19 shows the syphilis rates by gender/risk. By far, the vast majority of syphilis cases are among MSM, although African American non-MSM males are disproportionately affected. Among MSM, Whites, African Americans, and Latinos experienced the greatest rates of syphilis.

**EXHIBIT 19 Early Syphilis Rates per 100,000 Population, July 2007 to June 2008**

	AFRICAN AMERICAN	ASIAN AND PACIFIC ISLANDER	LATINO	NATIVE AMERICAN**	WHITE	OVERALL
MSM	651.7	285.1	508.9	4	726.7	557.5
Other men	31.4	1.0*	10.6	0	10.2	6.3
Female	16.4	0	1.9*	1	0	1.8

Source: SFDPH STD Prevention and Control, special data request, January 2009.

Note: STI rates for transpersons cannot be included due to lack of data on population size and inconsistent reporting of trans identity. Five cases of early syphilis were reported among transpersons during this time period.

\*Rates based on fewer than five cases.

\*\*Case counts are presented for Native Americans instead of rates due to small sample size.

**Hepatitis B and C.** Prevalence data for chronic hepatitis B and C in San Francisco is not available. National estimates from the Centers for Disease Control and Prevention can be found at <http://www.cdc.gov/hepatitis/Statistics.htm>. The SFDPH does receive reports from laboratories on markers for hepatitis C infection and hepatitis B infection that could potentially represent chronic infection, but they do not represent incidence or prevalence. In 2007, the SFDPH received reports of markers of hepatitis B infection on over 3,400 persons and reports of markers of hepatitis C infection on over 3,200 persons (SFDPH Communicable Disease Control Unit, special data request, March 2009). There are likely many others who have chronic viral hepatitis but are not in care, or who were diagnosed years ago and have not gotten tested recently.

In the U.S., Asian Americans tend to be infected with hepatitis B at a much higher rate compared with other groups, and this is also true in San Francisco (<http://www.sfhepbfree.org/about.php?nv=2#hbv%20api>). With both hepatitis B and C, IDUs are severely impacted. In a San Francisco study that included over 2,000 IDUs, the prevalence of hepatitis B antibodies was 81%, and the prevalence of hepatitis C antibodies was 91% (Tseng et al 2007).

**PLWA.** STI diagnoses among PLWA are presented in Exhibit 20. This data is important because the presence of an STI indicates the person engaged in unprotected sex. The implications, however, depend on the HIV status of the partner(s). For example, it has been hypothesized that increases in syphilis rates do not necessarily correspond to increases in new HIV infections, because most unprotected sex and syphilis transmission is happening between partners who are both HIV-positive (Truong et al 2006). (See the section on People living with HIV for more on seroadaptation, p. 63.)

#### EXHIBIT 20 STI Diagnoses Among People Living with AIDS, 2000-2006

YEAR OF STI DIAGNOSIS	NUMBER OF PLWA WITH NEW STI DIAGNOSIS
2006	345
2005	339
2004	327
2003	307
2002	285
2001	185
2000	180

Source: SFDPH HIV Epidemiology Section, special data request, December 2008.

Limitations: The STI data linkage with PLWA is performed once a year, only for new STI diagnoses that year. Previous years' numbers are not updated during the annual linkage.

#### Why Is Incarceration An Important Cofactor?

##### INCARCERATION

Individuals who are incarcerated tend to be affected by many other cofactors in their lives outside of jail or prison that affect their risk for HIV. Individuals at risk for incarceration include substance users, people with mental health issues, homeless persons, people living in poverty, and people who trade sex for money or drugs. This might partly explain why HIV prevalence is higher among inmates than the general population. Recent HIV prevalence data for inmates is not available, but there is data on the number of PLWHA who have a history of being incarcerated in the San Francisco jail system. Approximately 9% of PLWHA have such a history, and of these 1,292 individuals, nearly three quarters are IDUs and 16% are MSM non-IDUs (Exhibit 21).

#### EXHIBIT 21 Number of Persons Living with HIV/AIDS by BRP with History of Incarceration in County Jail, San Francisco, 2001-2006\*

BRP	2001	2002	2003	2004	2005	2006	PERCENT AS OF 2006
MSM	122	138	162	176	192	201	16%
IDU	735	791	847	899	918	936	72%
TFSM	81	97	101	100	105	107	8%
FSM	19	19	20	19	18	18	1%
MSF	15	17	21	22	31	30	2%
<b>TOTAL</b>	<b>972</b>	<b>1,062</b>	<b>1,151</b>	<b>1,216</b>	<b>1,264</b>	<b>1,292</b>	<b>100%</b>

\*Persons living with HIV/AIDS at the end of each year

Source: SFDPH HIV Epidemiology Section, special data request, December 2008.

In San Francisco, there is much conversation but little data to indicate whether HIV transmission during incarceration is a substantial issue, or whether the primary risk occurs outside of jail or prison as a result of HIV cofactors that also put people at risk for incarceration. Although HIV prevalence among inmates is relatively high, very few new HIV infections are identified among inmates in the San Francisco jails during their period of incarceration, suggesting that most HIV transmission and acquisition occurs outside of the jail setting. It is important to note that jails might be different than prisons in terms of risk during incarceration. In prison, stays are longer, which might result in more situational male-male sex. Because the drivers and cofactors that affect incarcerated people in their lives prior to incarceration are discussed elsewhere in this chapter, the remainder of this section focuses on risks while incarcerated and post-release.

During incarceration, the two primary HIV risks are unprotected sexual activity among inmates and sharing of needles to inject drugs. Regarding sexual behavior, the restriction of sexual activity to other inmates and the lack of availability of condoms can contribute to situational unprotected sex between men, although the men may not identify as gay or bisexual. Sex can be consensual, exchange sex (e.g. for food), or forced sex/rape (MMWR 2006b). San Francisco has been a leader in providing access to condoms at correctional facilities; an evaluation of a project that placed a condom dispensing machine in a county jail gym facility found that it's feasible and prisoners do take and use the condoms (Reznick et al 2008). However, despite the fact that condom distribution is permitted in San Francisco jails (only one of six jails in the country that permits this), an open condom package and used condoms are considered contraband. Further, having sex in jail is a felony under state law. Regarding needle sharing, prison policies restrict access to clean syringes, making it difficult for prisoners who inject drugs to use clean needles consistently. Needle-sharing risks apply to tattoo needles as well as needles used to inject drugs.

The post-release period can be a tumultuous time during which instability related to housing, employment, medication adherence for people living with HIV and other issues can lead to increased risk. This period is a particularly vulnerable time for people living with HIV. Recidivism is common among this group (Marlow et al 2008), as is injection drug use (White et al 2008). The HOPE Study, conducted with inmates living with HIV in the San Francisco jail system, found that interventions provided during incarceration decreased risk behaviors, but that after a short period of maintenance post-release, sex- and drug-related risk behaviors increased and medication adherence showed a corresponding decline (Clements-Nolle et al 2005 – for more on this study, see the box on p. 137). Other studies have also documented post-release sexual risk behaviors among this group (White et al 2008). Discharge planning can help to ease the transition in some ways; discharge planning for inmates living with HIV has been shown to improve the chances that the individuals will have access to a regular source of care in the community after release (Wang et al 2008).

Although incarcerated settings might pose some risk for HIV transmission, they definitely allow for critical opportunities to reach people living with or at risk for HIV because of the high HIV prevalence; however, it can be challenging to conduct HIV prevention in these settings. HIV prevention providers must deal with the effects of correctional facility policies regarding the availability of condoms and clean syringes. In addition, providers might face barriers while implementing individual and group education programs during and after incarceration (e.g., limited inmate movement, lack of buy-in among facility staff, inability to obtain access to inmates due to lock downs or other factors, stigmatization of sex with men in an all-male environment), even though these are critical HIV prevention strategies. For many incarcerated women, personal histories include partner violence, economic vulnerability, and discrimination, and jail-based HIV prevention may represent an opportunity to address the more global needs of disenfranchised women while providing them with tools to prevent HIV (Fields et al 2008). The HPPC recognizes that the administrative costs of conducting HIV prevention programs in correctional settings may be higher than for prevention in other settings due to these types of challenges. It is very critical that service providers working with incarcerated populations ensure that they can link people to appropriate services, both with the jail setting and upon release, and that services be coordinated to ensure the best possible outcomes.

## Who Is Incarcerated in San Francisco?

Men and people of color are over-represented among the incarcerated population (Exhibit 22). African Americans in particular are incarcerated at high rates, which indicates a need to consider this cofactor in prevention programs designed for African Americans. Anecdotally, as of 2009, an increasing number of recent immigrants who are Spanish-speaking are being incarcerated.

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### EXHIBIT 22

#### Incarceration in San Francisco

	SAN FRANCISCO COUNTY JAILS*		JUVENILE PROBATION**	
	NUMBER	PERCENT	NUMBER	PERCENT
African American	1,247	58	564	58
Asian and Pacific Islander	87	4	93	10
Latino	329	15	254	26
Native American	NA	NA	1	0.1
White	397	18	48	5
Other/Unknown	97	5	11	1
<b>TOTAL</b>	<b>2,157</b>	<b>100%</b>	<b>971</b>	<b>100%</b>

NA = Data not available.

\*Source: San Francisco Sheriff's Department, special data request, January 2009. Reflects jail population on April 6, 2008.

\*\*Unduplicated count of juvenile hall bookings, 2007. Source: [http://www.sfgov.org/site/uploadedfiles/juvprobation/Documents/2007AnnualReport\\_Statistics.pdf](http://www.sfgov.org/site/uploadedfiles/juvprobation/Documents/2007AnnualReport_Statistics.pdf)

## Baseline Findings from the Homebase Outcome Program Evaluation (HOPE) Study: An HPPC-Prioritized Study

(Clements-Nolle et al 2005)

The HOPE Study was prioritized by the HPPC and was subsequently funded by the Centers for Disease Control and Prevention (CDC), the Health Resources and Services Administration (HRSA), the California State Office of AIDS, and the City and County of San Francisco. The purpose of the study was to evaluate the effect of an enhanced discharge planning and case management program for inmates living with HIV in the San Francisco County jail system. A total of 261 inmates were enrolled in the study.

Baseline interviews with participants regarding their life circumstances in the month prior to incarceration revealed that this population has multiple complex needs. Over two-thirds (69%) were unstably housed. Nearly half (49%) did not have any form of health insurance prior to incarceration, and less than one-third were taking highly active anti-retroviral therapy (HAART). Of those who were, 50% had missed doses. Substance use was extremely high among this group, particularly crack (65%), marijuana (62%), and speed (31%), and 50% reported injecting drugs.

In addition to these HIV cofactors, inmates reported high levels of behaviors that could transmit HIV. Of those who injected drugs, 19% reported distributive syringe sharing (i.e., a person using a needle then allowing another person to use it). Of females reporting sex with males, 50% reported unprotected sex with an HIV-negative or unknown status partner. Of males reporting sex with females, 27% reported sex with an HIV-negative or unknown serostatus partner. Among MSM, 22% reported unprotected insertive and 20% reported unprotected receptive anal sex with an HIV-negative or unknown serostatus partner.

Despite these significant health, social service, and HIV prevention needs, only 35% of participants saw a community case manager in the month prior to incarceration.

At the time of this writing, a preliminary analysis of the post-intervention data has been completed. The data shows that interventions provided during incarceration decreased risk behaviors, but that after a short period of maintenance post-release, sex- and drug-related risk behaviors increased and medication adherence showed a corresponding decline. These findings suggest a need for ongoing case management of this population before, during, and after incarceration.

## Why Is Homelessness An Important Cofactor?

### HOMELESSNESS

Homeless individuals may experience similar yet more dire situations compared to those living in poverty since they are living in a more extreme form of poverty. Homeless people often experience multiple cofactors that can intensify their risk for HIV infection. Impaired mental health status, higher rates of substance use, dual diagnosis with mental health and substance use issues, exposure to physical and sexual violence, survival sex, repeated contacts with the criminal justice system, and lack of access to prevention messages and services are some of the relevant risk factors for this population.

HIV prevalence among homeless persons in San Francisco is higher than that for the general population (Exhibit 23), although this appears to be due largely to the high numbers of MSM and IDUs who are homeless, as well as the survival behaviors that stem from poverty (e.g., sex and drug trade), rather than the homelessness per se (Hahn et al 2004). As such, programs designed to serve homeless people might be a way to reach people who are living with or at risk for HIV due to risk behaviors and multiple cofactors. Providers also need to consider the special needs of homeless individuals, such as the need for late night services.

### EXHIBIT 23

#### Summary of HIV Prevalence Studies Among Homeless Individuals in San Francisco

SAN FRANCISCO POPULATION	PREVALENCE	SOURCE
<b>HOMELESS YOUTH</b>		
Homeless MSM and MSM/F under 30	11%	Robertson et al 2004
Young homeless gay and bisexual males	29%	Robertson et al 2004
<b>HOMELESS ADULTS</b>		
Homeless adults	14%	Riley et al 2005
Homeless adults	11%	Robertson et al 2004
Homeless MSM	30%	Robertson et al 2004
Homeless IDUs (non-MSM)	8%	Robertson et al 2004
Homeless non-MSM non-IDUs	5%	Robertson et al 2004

In San Francisco between 2004 and 2008, between 8% and 12% of all AIDS diagnoses were among homeless individuals (SFDPH 2008e). Compared with the general population of PLWHA, people who were homeless at the time of their HIV/AIDS diagnoses were more likely to be female, African American, IDUs, and younger (SFDPH 2008e). Despite the disproportionate effects of homelessness on women and youth living with HIV, most homeless PLWHA are MSM or IDU and age 30 or older. Homeless people living with HIV are an important population to reach for two reasons: (1) adherence to anti-retroviral medications can be challenging for this group; and (2) there are interventions that show promise for reducing HIV risk behaviors for homeless people living with HIV. These interventions include one study which found that food insecurity was strongly associated with non-adherence to treatment, and half of homeless adults living with HIV in San Francisco experience food insecurity, suggesting that a simple intervention that ensures access to food might help improve adherence and reduce transmission (Weiser et al 2009). Another study found that homeless adults receiving cash benefits were less likely to have income from selling drugs or trading sex and less likely to inject drugs, which raises the question about whether cash assistance might reduce HIV risk among this group (Riley et al 2005).

Providers serving the homeless can incorporate HIV prevention into their programs, or other providers can address the needs of their homeless clients through linkages with programs that provide housing, food, clothing, a place to shower, and other services for homeless individuals. Policy interventions designed to reduce homelessness and its health impacts are also needed. Delivering HIV prevention services to homeless persons can be especially challenging because establishing trust and consistent contact are hindered by constant moving around (CAPS 2005). Therefore, HIV prevention programs must include components designed to keep homeless persons connected to the service system and focus on the homeless populations at highest risk for HIV.

## Who Is Affected by Homelessness in San Francisco?

San Francisco conducts a count of the homeless population every two years. Included in this count are both unsheltered and sheltered homeless people living or staying in emergency shelters, transitional housing, mental health facilities, treatment centers, County jail, and city hospitals. According to the 2007 homeless count, there are 6,377 homeless individuals living in San Francisco, representing a 26% decline since 2002 (Exhibit 24; Homeless Count Report 2007). The number of unsheltered homeless has also declined, with 38% fewer homeless people in 2007 compared with 2002. Unsheltered homeless people are disproportionately male and African American.

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### EXHIBIT 24

### Homeless Individuals in San Francisco, January 2007

PLACE LIVING CURRENTLY	TOTAL
Unsheltered (on the street)	2,771 44%
Shelters	1,497 24%
Transitional housing and treatment centers	1,266 20%
Resource centers and stabilization	321 5%
Jail	400 6%
Hospitals	122 2%
<b>TOTAL</b>	<b>6,377 100%</b>

Source: 2007 Homeless Count Report, [http://www.sfgov.org/site/uploadedfiles/lhcb/homeless\\_count/SanFrancisco2007HomelessCount%20final.pdf](http://www.sfgov.org/site/uploadedfiles/lhcb/homeless_count/SanFrancisco2007HomelessCount%20final.pdf)

\*Percent does not total 100 due to rounding.

## Why Are Immigration and Language Important Cofactors?

### IMMIGRATION AND LANGUAGE

Immigration is a cofactor for HIV risk. The HPPC believes that economic instability and poverty, lack of access to health care and social services, lack of information, isolation, and language barriers all have the potential to make immigrants particularly vulnerable to HIV. Also, because of a legitimate fear of deportation, undocumented immigrants may delay treatment when sick or may not access HIV testing or health care at all, as HIV prevention providers' experience has shown. One study among API immigrants in New York found that undocumented individuals had a lower rate of receipt of primary care services and more barriers to access (Chin et al 2006). Further, because data on language is not routinely collected in many datasets, it is difficult to say how language affects HIV risk, and therefore challenging to design appropriate HIV prevention programs.

Low levels of HIV/AIDS knowledge have been documented among some immigrant groups, such as day laborers (Kral et al 2006). These low levels of knowledge may be attributed to lack of access to HIV information and prevention messages that are linguistically and culturally appropriate. In addition to Spanish, researchers and health care providers note a growing need for translators and services for immigrants who speak indigenous Asian and Central American languages (Snyder et al 2000).

Despite the theoretical links that have been drawn between immigration and HIV risk, the research is mixed on whether and how immigration and acculturation affect HIV risk, and it may be different depending on the specific group (e.g., Latinos vs. Asians, gay men vs. other men). The degree of HIV risk depends on a number of factors: (1) how their sexual and drug behaviors change after moving to the U.S.; (2) their access to appropriate health services, HIV education, and condoms; (3) social norms about safe sex and drug practices in their communities; (4) the nature of their relationships with sex partners in the U.S. and their home country; (5) their experience with racism, discrimination, and poverty in the U.S.; and (6) their English

speaking abilities and educational levels, which can impact access to services (CAPS 2003b). For more on specific immigrant populations, see the sections on Latinos (p. 98) and APIs (p. 96).

California public policy and public sentiment in the last two decades generally has not been supportive of health promotion or equal rights for immigrants (see Morin et al 2004 for a complete discussion). For example, Proposition 187 (<http://www.igc.org/cfj/about187.html>) was passed by California voters in 1994 but not implemented due to questions of constitutionality. It barred undocumented immigrants from receiving public health, social, and educational services. Further, until 1990 homosexuals were not permitted to immigrate to the U.S. (Shoop 1993).

San Francisco, in contrast, is a “sanctuary city,” meaning that City officials (with a few exceptions) cannot assist federal immigration enforcement and cannot require disclosure of immigration status. Recent local events have heightened the focus on immigration issues locally, including a controversy about whether San Francisco’s status as a sanctuary city is in fact resulting in the shielding of immigrant felons, the recent implementation of Healthy San Francisco which allows people to access health services regardless of immigration status, and the issuing of municipal ID cards to undocumented immigrants. Even if San Francisco policies are generally immigrant-friendly, people might perceive a threat of deportation or other consequence as a result of accessing services, which could create a barrier to receiving HIV testing, prevention, and health care.

## Who Are San Francisco’s Immigrants and What Languages Do They Speak?

San Francisco is home to a large immigrant population – over one-third of residents (35%) are foreign born (Exhibit 25), and 14% of that group are non-citizens. Estimates of the number of undocumented individuals living in San Francisco are outdated and therefore not reliable.

The city is a primary destination for immigrants from Asia and Latin America. Nearly two-thirds (60%) of San Francisco’s immigrants were born in Asia, and an additional 20% are from Central or South America (see Chapter 1: Epidemiologic Profile for detailed data, p. 20). As such, most individuals who speak another language speak an Asian language or Spanish. Among San Francisco immigrants, the majority (61%) speak English less than very well (Exhibit 26).

### EXHIBIT 25 San Francisco Residents by Country of Birth, 2008

PLACE OF BIRTH	NUMBER	PERCENT
United States	525,683	65%
TOTAL Foreign Born	283,293	35%
<i>Foreign born, Naturalized Citizen</i>	173,671	21%
<i>Foreign born, Non-Citizen</i>	109,622	14%
TOTAL San Francisco Population	808,976	100%

*Source: American Community Survey 1-year estimates, U.S. Census Bureau, 2008.*

*Note: Unlike the census, these estimates are based on a sample, not a complete count, of San Francisco residents. Thus there is a margin of error associated with these figures.*

**EXHIBIT 26 English Speaking Ability Among San Francisco Immigrants Age 5 and Older, 2008**

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	NUMBER	PERCENT
Monolingual non-English*	172,165	61%
Bilingual English and other language	76,755	27%
Monolingual English	33,285	12%
<b>TOTAL</b>	<b>282,205</b>	<b>100%</b>

\*Speaks English “less than very well.”

Source: American Community Survey 1-year estimates, U.S. Census Bureau, 2008.

Note: Unlike the census, these estimates are based on a sample, not a complete count, of San Francisco residents. Thus there is a margin of error associated with these figures.

## Why Are Exchange Sex and Sex Work Important Cofactors?

### EXCHANGE SEX AND SEX WORK

Exchange sex is a broad term that is defined as the exchange of sex for money, drugs, food, a place to stay, or any other perceived benefit. Sex is usually traded in two different types of situations. The first situation is in the context of commercial sex work (CSW), where the individual identifies as someone who trades sex as their profession or means of making a living. Commercial sex workers may be street-based or off-street (i.e., based out of a home, apartment, hotel, massage parlor, or some other dwelling). The second situation is survival sex, where the individual might not identify as a sex worker but sometimes trades sex based on their needs at the time. The needs of these two populations and how they can be reached might be different. Other cofactors and drivers associated with CSW and survival sex include homelessness (see p. 138), poverty (see p. 142), substance use (see p. 126), multiple partners (see p. 123), childhood sexual abuse (see p. 130), low self-esteem (see p. 130), and mental health issues (see p. 130).

There are many ways in which CSW can theoretically increase HIV risk; however, if sex workers are at elevated risk for HIV infection, it might have as much or more to do with the other cofactors they experience than the actual sex work itself. Research shows that in San Francisco, for female sex workers, safer sex practices during exchange sex are higher and STI/HIV infection rates are believed to be lower than in other locales (see below for studies).

It appears that most unprotected sex among female sex workers occurs with primary or non-exchange partners. For example, the local arm of the National HIV Behavioral Surveillance study with high-risk heterosexuals found that, overall, safer sex practices were higher during exchange encounters compared with non-exchange encounters (e.g., fewer episodes of unprotected vaginal/anal sex, fewer episodes of sex while high or drunk; Chen et al 2009a). Another study found that all 107 API women massage parlor workers interviewed reported 100% condom use for vaginal sex with their customers, although condom breakage and slippage were reported as issues, and only 17% reported they always used condoms with their non-exchange partners (Nemoto et al 2000).

Even when reported risks are higher, these risks do not necessarily translate into increased HIV infection rates. In a Northern California study in which female sex workers reported higher levels of cofactors known to increase risk, such as higher numbers of partners and high-risk partners, they were no more likely to have HIV, chlamydia, or gonorrhea than non-sex workers (Cohan et al 2005). Across studies, the main issue that appears to influence safer sex practices is economic pressure; if the sex worker is offered more money for sex without condoms, the immediate need for money can overshadow the importance of longer-term health consequences.

In addition, in California, it is legal for the police to use possession of condoms as evidence of illegal sex work. In San Francisco, anecdotally, this issue has created substantial anxiety among indoor establishments as well as street-based workers, who may be afraid to carry condoms, have them on the premises, or negotiate safer sex for fear of arrest and prosecution. As of early 2009, local community-based efforts were underway to try to change these laws.

There is less research conducted with MSM (including transmales who have sex with men)

and transfemale sex workers, but these groups might have different risks than female sex workers. For example, among street-recruited MSM-IDU in one study, 68% reported being paid by another man for sex, and having HIV was independently associated with a higher number of paying male partners (Bacon et al 2006). Transfemale sex workers are particularly vulnerable economically and socially, due to stigma, and the pressure to accept more money in exchange for unprotected sex can be intense. In addition, transfemales may experience greater risks for HIV infection than other groups because of the high prevalence of receptive anal sex (the highest risk behavior for acquiring HIV) with paying partners. A local qualitative needs assessment prioritized by the HPPC was conducted among MSM and transfemale sex workers in 2003. Interviews revealed that the most pressing needs for these populations included housing, health care for HIV-negative people, mental health support, job training and opportunities, and reduction of police harassment of transfemale sex workers (Harder+Company 2004b).

In summary, exchange sex must be addressed in at least two ways: (1) reaching commercial sex workers to provide them with information and services; and (2) addressing sex work as a cofactor among populations who engage in survival sex or who do not identify as sex workers. For both groups, linkages to other supportive services are critical, including housing, financial assistance, legal services, health care, and STI testing and treatment. HIV prevention with these populations should be nonjudgmental and should not coerce people into “getting off the streets.” The HPPC recommends a harm reduction client-centered approach, in which all options from continuing to exchange sex daily to stopping exchange sex altogether are available to clients depending on their individual circumstances.

A third approach is decriminalization of sex work, although opinions are mixed as to how such an intervention would impact HIV risk because it has not been tried or evaluated in San Francisco. A measure supporting decriminalization was on San Francisco’s November 2008 ballot, but it did not pass.

Regardless of the approach, services for sex workers must be culturally competent and take into account sex workers’ special needs, such as making services available at times of day that do not interfere with work hours. Involvement of sex workers in the planning and implementation of programs might also help to improve the acceptability of services among this priority population.

## **Who Is Affected by Exchange Sex and Sex Work in San Francisco?**

The experiences of community-based providers serving sex workers provides some insight into the demographics of this population. In overall numbers, the majority of sex workers are likely women, with men and trans people also involved. Most are estimated to be between 18 and 37 years old, although younger teenagers also engage in sex work. Transfemales have high rates of sex work in San Francisco – 80% have a history of sex work and/or survival sex in one study (Clements-Nolle et al 2001). Female Asian massage parlor workers and Latino male day laborers engaging in survival sex are two subpopulations of concern (see the sections on APIs, p. 96, and Latinos, p. 98).

## **Why Are Income and Poverty Important Cofactors?**

### **INCOME AND POVERTY**

Health and disease are not equally distributed in society. Low socioeconomic status is one of the most consistent determinants of poor health status (Robert et al 2009). Impoverished communities experience higher morbidity and mortality rates for most major chronic diseases and infections, including HIV infection. Lack of access to health services, social and physical environments unsupportive of healthy behavior, injection drug use and other substance use, commercial sex work, multiple sex partners, sex with partners who are high-risk, low perception of risk, and the prioritization of immediate needs such as maintaining food, housing, and income over issues such as HIV, are some factors associated with poverty that may contribute to increased HIV risk. The HPPC believes that these conditions provide a context for understanding why poor people are at increased risk for HIV infection. They should draw attention to the larger social and political responsibility of addressing the root causes of poverty.

In general, research has found associations between poverty and other behaviors/cofactors that are known to affect HIV risk, but not necessarily a direct link between poverty and HIV risk. For example, one study conducted among low-income female sex workers in Northern California revealed that this group had higher rates of risk behavior compared with non-sex workers but were no more likely to have HIV or STIs (Cohan et al 2005). In this study, risk behaviors were documented among a low-income group, but substantial HIV infection was not.

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HIV prevention programs for low-income individuals can be housed in a variety of agencies – those that serve low-income individuals, those that are focused on HIV prevention, or other types of health care or social service agencies. Regardless, the HPPC believes that HIV prevention programs should have the capacity to address the needs of low-income individuals as the need arises. In essence, San Francisco's HIV prevention providers have learned that immediate survival needs must be addressed first in order for HIV prevention to be effective. This means linking individuals to services that can assist with housing, money, food, and clothing, as well as health care services, and addressing the root causes of poverty through advocacy and policy change. In some cases, the provision of such basic living assistance can in itself help reduce HIV risk, as was found with providing cash assistance to homeless people (Riley et al 2005).

## Who Is Affected by Poverty in San Francisco?

Between the 1990 and 2000 census, San Francisco underwent dramatic changes in income distribution among its residents, whereby the percentage of households making more than \$75,000 per year more than doubled. This trend of an increasing percentage of people in high income brackets continued between 2000 and 2008 (Exhibit 27). This shift is not likely an indication of San Franciscans moving up the economic ladder. Rather, it reflects the exodus of lower income individuals and families from San Francisco and an influx of higher income populations due to a steep rise in the cost of living, especially with regard to housing costs. At the time of this writing in 2009, the economy is on the verge of another dramatic shift, with unemployment rates and home foreclosures rising dramatically. It remains to be seen what the effects will be on San Francisco and how HIV and HIV prevention will be affected.

### EXHIBIT 27 Changes in Household Income, San Francisco, 2000–2008

INCOME LEVEL	PERCENT OF HOUSEHOLDS 2000 (N=329,850)*	PERCENT OF HOUSEHOLDS 2008 (N=321,947)**
<\$25,000	23%	21%
\$25,000-\$49,999	22%	15%
\$50,000-\$74,999	18%	14%
\$75,000 and over	37%	45%
<b>TOTAL</b>	<b>100%</b>	<b>95%</b>

\*Source: U.S. Census, U.S. Census Bureau, 2000.

\*\*Source: American Community Survey 1-year estimates, U.S. Census Bureau, 2008. Unlike the census, these estimates are based on a sample, not a complete count, of San Francisco residents. Thus there is a margin of error associated with these figures.

Based on the 2008 American Community Survey, about one-tenth (11%) of San Francisco residents live below the poverty level (see Chapter 1 Epidemiologic Profile for detailed data, p. 21). African Americans are severely affected, with over one-quarter (27%) living in poverty (Exhibit 28). Only a slightly higher percentage of women live in poverty compared with men (10.5% vs. 11.6%), but families headed by single mothers are disproportionately represented among those living in poverty (13%).

## EXHIBIT 28 Percent Living in Poverty by Race/Ethnicity, San Francisco, 2008

RACE/ETHNICITY	PERCENT LIVING BELOW POVERTY (N=88,154)
African American	27%
Asian and Pacific Islander	11%
Native American	NA*
White	9%
Multiracial	15%
Other	14%
Latino (of any race above)	14%

\*Not available. Estimates not provided.

Source: American Community Survey 1- year estimates, U.S. Census Bureau, 2008.

Note: Unlike the census, these estimates are based on a sample, not a complete count, of San Francisco residents. Thus there is a margin of error associated with these figures.

## Why Is Access to Services An Important Cofactor?

### ACCESS TO HEALTH AND SOCIAL SERVICES

All people have a basic right to health and health care, but not everyone has the access to the resources needed to maintain optimal physical, emotional, and mental health. Access to services encompasses a wide range of concepts, including physical access to health care sites, access to services that are culturally and linguistically appropriate, access to health insurance that allows people to receive care that is paid for, and many other aspects.

Access to health and social services is important because people who are more connected to health-related resources and support are more likely to engage in health-promoting behaviors (e.g., safer sex). Access to services also allows people to obtain information and education that can help them learn how to protect themselves (e.g., harm reduction).

While there are many health services that all individuals should have access to, three of the most important are primary care, substance use treatment, and mental health services. Primary care for people living with HIV and those at risk provides a key opportunity for HIV prevention education and linking people with other services. Substance use and mental health services, especially when integrated, can address some of the key factors that lead to high-risk sex. In San Francisco, the substance use and mental health sections in the health department are now in one section called Community Behavioral Health Services (CBHS). CBHS has an integration policy that is designed to facilitate access for all individuals needing substance use and/or mental health services. It can be found at: <http://www.sfdph.org/dph/files/CBHSPolProcMnl1.05-01-CBHSIntegration-02-2008.pdf>.

Despite San Francisco's ideological commitment to access to services for the most vulnerable of San Francisco residents, unmet needs remain, and treatment on demand for substance use and mental health issues is not available for every individual who wants or needs it. Improved accessibility and availability of these services is critical for HIV prevention to have its greatest affect. Addressing barriers to access is an ongoing struggle that involves work at the structural and policy levels, particularly around access to primary care, substance abuse, and mental health services.

## Factors that Affect Access to Services

**Lack of services.** If there are not enough substance use treatment slots or mental health beds, people suffer. Lack of services is a symptom of larger social policies that do not prioritize such services, possibly due to the stigma that society still attaches to people who experience problems with mental health or substance use.

**Lack of insurance.** Being uninsured or underinsured can prevent individuals from receiving needed services, especially primary care services, if they cannot afford to pay for care out of pocket. Further, lack of insurance can lead to inappropriate utilization of services such as emergency room care, which further drives up health care costs, exacerbating the insurance crisis.

As of 2007, according to the California Health Interview Survey, there are approximately 63,000 uninsured adults in San Francisco. As of 2009, San Francisco is attempting to address lack of health insurance through a new program called Healthy San Francisco. Although it is not insurance per se, Healthy San Francisco makes health care services accessible and affordable for uninsured residents, allowing them to have basic and ongoing medical care regardless of immigration status, employment status, or pre-existing medical conditions (<http://healthysanfrancisco.org/>).

Although no specific links between being uninsured or underinsured and HIV risk were found in the literature reviewed for this section, many people affected by HIV have issues related to poverty, employment, and immigration status that affect insurance status, which in turn can affect access to the health care system. In HIV prevention, the availability of free confidential and anonymous HIV testing is critical for making sure that lack of insurance is not a barrier to HIV testing.

**Limited knowledge of services.** A lack of knowledge about prevention services and their availability is clearly a barrier to obtaining accurate information about HIV. Some populations might require very specific efforts in order to become more aware of the prevention services available, and the services themselves need to be carefully designed to reach the population. In addition, language, culture (or acculturation), and literacy are often important factors that limit knowledge of services, but other factors, both personal and institutional, may play a critical role.

**Low perception of risk.** Low perception of risk has been correlated with involvement in high-risk behaviors. Perceptions about who HIV affects, lack of knowledge about sexual partners' risks, and other factors can contribute to low perceptions of risk.

**Discrimination.** Discrimination refers to social patterns of prejudice, rejection, and stigmatization and includes racism, homophobia, biphobia, transphobia/gender identity-based discrimination, sexism, ageism, ableism, and discrimination against substance users or people with mental health issues. Discrimination can manifest in many ways, including laws and policies, attitudes or public opinions, violence, or in health and social service provision. Several studies have found that discrimination can affect HIV risk (see Section I: Populations, p. 62, where discrimination and stigma are discussed as relevant). Barriers to service can result from discrimination, lack of availability of culturally appropriate services or lack of funding for certain types of services (e.g., stigma surrounding injection drug use contributes to the lack of federal funding for syringe access programs).

**Language barriers and low literacy.** People whose first language is not English face barriers when prevention is delivered only in English. Some people speak but do not read or write English, and some people do not read or write in any language. Issues related to language and literacy that affect how HIV prevention messages are received include the cultural context in which messages are understood, the perceptions of the target population about the relevance of the message, the priority population's perception of the intent of the message sender, the value and associations that the priority population places on particular risk behaviors, the use of common terms rather than medical or technical vocabulary, and layout and visual aspects of printed materials. Prevention education and services must be available in the language of the recipient. Language and literacy issues affect both immigrants and U.S.-born individuals and are particularly salient for visually and hearing impaired people.

## Why Is Having HIV-Positive or High-Risk Sexual Partners An Important Cofactor?

### HAVING HIV-POSITIVE OR HIGH-RISK SEXUAL PARTNERS

Prevention efforts need to focus on HIV-negative people who have HIV-positive or high-risk partners because this is the primary group at risk for HIV. Clearly, unprotected anal or vaginal sex between an HIV-negative person and a person living with HIV is high risk for HIV transmission, with risk varying depending on whether the person living with HIV is the receptive or the insertive partner and the type of sex (anal vs. vaginal).

It should be noted that people do not always know their own or their partners' HIV status or risks, and data suggests that assumptions are often made by both parties, about their own and each other's HIV statuses. These assumptions might be correct or not, and sexual decisions are often based on them. For example, one study found that an increased number of assumed *HIV-negative* partners among MSM was associated with HIV seroconversion, indicating that at least some partners reporting HIV-negative status were not actually HIV-negative (Buchbinder et al 2005). In another example, a study of heterosexual men and women found that, in general, female participants perceived their male partners' risks to be much lower than they actually were; many male partners reported a history of sex with men and sexual partners outside of the primary relationship, although they had not disclosed this to their female partners (Chen et al 2009b). Issues around disclosure and communication about HIV status are also relevant and are described in more detail in the section on People Living with HIV (p. 63).

Further, people may have condom use patterns that differ depending on the type of partner; often, there is little or no condom use with primary partners and higher (but not necessarily frequent or consistent) condom use with casual or sex work partners. Whether a partner is primary, casual, or a sex work partner is simply not a reliable indicator of the partner's HIV status or risk.

## Factors that Affect Whether a Person Has HIV-Positive or High-Risk Partners

All of the drivers and cofactors discussed in this chapter could affect whether a person is likely to encounter high-risk or partner living with HIV in their sexual networks. Individuals from two distinct communities could engage in exactly the same risk behaviors, but one might have a much greater risk of contracting or transmitting HIV than the other, due to his or her sexual networks, which can have a great influence on the potential for HIV exposure (CAPS 2003a). In addition, those who have sex with people in high-prevalence populations (e.g., gay men, IDUs) have a greater chance of exposure. The clearest example of how having high-risk partners or people living with HIV can affect HIV transmission, even when there is no increase in high-risk behavior, is with African American MSM. This group has equal or lower rates of risk behavior compared with other MSM but higher HIV incidence and prevalence, which is believed to be due, at least in part, to sexual network factors (e.g., African American MSM are more likely to partner with other African American MSM) (Berry et al 2007). (For a more in-depth discussion of this issue, see the section on African American People, p. 91.)

## Why Is Use of Public and Commercial Sex Venues An Important Cofactor?

### USE OF PUBLIC AND COMMERCIAL SEX VENUES

Public sex environments include places where people "cruise" for sexual partners, such as parks. Commercial sex environments are places where an admission is paid for entrance, such as bathhouses and sex clubs. Unprotected sex between partners of opposite serostatus may occur in these environments, and safer sex negotiation may be inhibited by a number of factors, including the public environment, anonymity of partners, covertness of the sex, and drug use.

Despite these factors, research seems to support that certain commercial sex environments might actually contribute to reduced risk behavior. Two studies conducted with MSM attending bathhouses in urban environments found that most bathhouse patrons engaged in lower risk behaviors during bathhouse encounters, such as oral sex, and among those who did engage in anal sex, most (nearly 90%) used condoms (Van Beneden et al 2002, Woods et al 2007). In fact, participants in the second study were more likely to report having had high-risk sex at home

or in a hotel compared with a bathhouse (Woods et al 2007). In the first study, those who did report unprotected anal sex were more likely to be HIV-positive and report a greater number of partners overall, suggesting that this group might be an important one to target within a bathhouse setting.

Another study conducted in urban areas other than San Francisco found that there was a condom use norm in bathhouses, but there was also a norm of silence that precludes verbal negotiation of condom use (Elwood et al 2003). According to a Los Angeles study, interventions in bathhouse environments should pay attention to the distinct characteristics of the particular bathhouse, including its clientele, the sexual practices and condom use norms, norms regarding communication about sex and HIV status, bathhouse rules, and substance use (Mutchler et al 2003).

Less is known about the specific risks involved in meeting or having sex with someone in a public sex environment. A recent study found that, in San Francisco, MSM with unrecognized infection frequent adult bookstores (Raymond et al 2008). These and other similar locations might be an ideal setting for locating this group and linking them to HIV testing and care (Raymond et al 2008).

More information is needed about populations that use commercial and public sex venues in San Francisco, in terms of their risk for HIV and their service needs. In both public and commercial venues where sex occurs, condoms, information, HIV testing, and education should be available through outreach programs. In addition, interventions aimed at promoting policies that support safer sex, such as "safe sex only" spaces in bathhouses, might be appropriate.

## Who Goes to Public and Commercial Sex Venues?

MSM, both those who identify as gay/bisexual and those who identify as heterosexual, are the primary populations at risk due to sex in these locales. Marginalized populations, such as homeless persons, immigrants, sex workers, and others who may not have anywhere else to have sex except in public environments, are also at risk.

# APPENDIX I Resource Inventory

## EXHIBIT A1 Distribution of Funds by Resource Allocation Tier Compared with HPPC Recommendations from the 2004 HIV Prevention Plan\*

RESOURCE ALLOCATION TIER	BRPs	ESTIMATED PERCENT OF NEW INFECTIONS, 2004	HPPC RESOURCE ALLOCATION GUIDELINES	ACTUAL DISTRIBUTION OF FUNDING**
Tier 1	1. MSM, MSM/F 2. TSM, TSM/F, TSF, TST, TSM/T, TSF/T	79%	73-81%	75%
Tier 2	3. MSM-IDU, MSM/F-IDU 4. FSM-IDU, FSM/F-IDU, FSF-IDU 5. MSF-IDU 6. TSM-IDU, TSM/F-IDU, TSF-IDU, TST-IDU, TSM/T-IDU, TSF/T-IDU	20%	18-22%	21%
Tier 3	7. FSM, FSM/F, FSF	1%	1-5%	3%
Tier 4	8. MSF	<1%	<1%	<1%

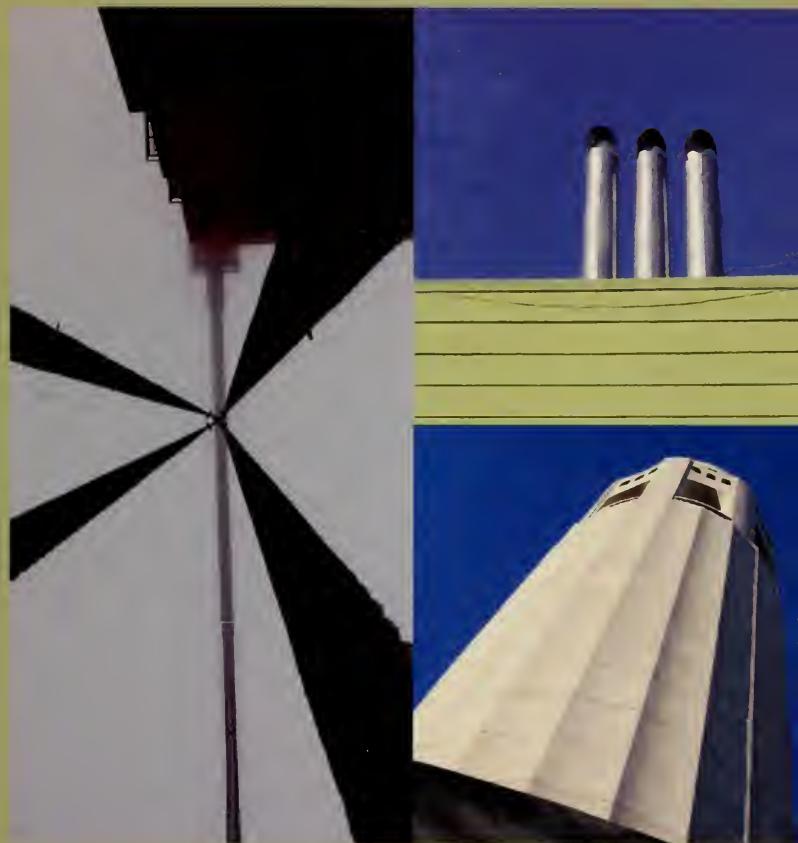
\*For more information on the 2004 resource allocation tiers and BRPs, see Chapter 3: Priority Setting, pp. 150-168.

\*\*The funding distribution presented is as of February 2009. This takes into account budget reductions that were made due to the San Francisco budget deficit.



# 3

## Priority Setting



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# Introduction

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## PURPOSE OF CHAPTER

The primary purpose of this chapter is to outline the priority populations for HIV prevention funding in San Francisco based on local epidemiologic data. This chapter complements the Community Assessment chapter. The Priority Setting Chapter outlines *who and what* issues are prioritized for funding, whereas the Community Assessment Chapter discusses the needs of different populations and the HIV Prevention Planning Council's (HPPC) recommendations for *how* to conduct HIV prevention with these groups.

The ultimate goal of HIV prevention is to eliminate new HIV infections. In order to accomplish this, HIV prevention must address the complex needs of people and communities. The HPPC has determined that the best way to eliminate new infections is to focus the greatest resources on the highest risk populations. The HPPC uses a blend of data analysis and community values to determine priorities, which are described throughout this chapter.

HIV prevention is no longer just about education: it is about dealing with a focused set of issues in order to promote health and wellness among individuals and communities. This chapter is the foundation for this focused approach to HIV prevention. It identifies the highest priority populations and the highest priority issues that must be addressed in order to do effective prevention, and it recommends funding accordingly, from a planning perspective. It is supplemented by the Community Assessment Chapter, which describes the broader HIV prevention needs and issues of people at risk for HIV, and the Strategies and Interventions Chapter, which gives providers the tools they need to design and implement HIV prevention programs. Together, these three chapters represent San Francisco's approach to HIV prevention.

## HOW TO READ THIS CHAPTER

Readers who are familiar with the history and structure of San Francisco's priority setting model may choose to focus on Section II, which outlines the priorities for 2010. Readers needing more context for the model are invited to read the whole chapter.

There are five distinct Behavioral Risk Populations (BRPs) identified in the priority setting model (see Exhibit 2, p. 156). Generally, these five BRPs fall into two groups: (1) The BRPs in which the bulk of new infections occur, which include Males who have sex with Males (MSM), Transfemales who have sex with Males (TFSM), and Injection Drug Users (IDU), and (2) the BRPs with a very small number of new infections each year, which include Females who have sex with Males (FSM) and Males who have sex with Females (MSF). Throughout this chapter, these two groupings of BRPs are referred to as the "high-risk" and "low-risk" BRPs respectively.

## TERMS & DEFINITIONS

**BEHAVIORAL RISK POPULATION (BRP)** A category that describes behavioral risk for HIV infection. The HPPC uses BRPs to identify who is at risk for HIV in San Francisco and how HIV prevention priorities should be set. The BRPs for 2010 are listed in Exhibit 4.

**COFACTOR** A condition that can increase risk for HIV, increase susceptibility to infection, or decrease ability to receive and act upon HIV prevention messages. Prioritized cofactors for 2010 are listed in Exhibit 7.

**DRIVER** An underlying condition that is directly linked to a large number of new infections throughout San Francisco. By definition, drivers are factors that affect the high-risk BRPs (MSM, TFSM, and/or IDU), since they account for the bulk of new infections. Drivers for 2010 are listed in Exhibit 6.

**PRIORITY SETTING** The process that community planning groups, such as the HPPC, use to determine recommendations for which populations and issues should be prioritized.

**SUBPOPULATION** A demographic group defined by race/ethnicity, age, gender, or another factor. Prioritized subpopulations for 2010 are listed in Exhibit 5.

# The Current Model and Its History

## SECTION I

San Francisco's first priority setting model was developed in 1995. Although it has gone through several iterations since then, the underlying philosophy has remained the same: the priorities for San Francisco are designed to reflect the local trends in HIV and are based on local epidemiologic evidence, research, and practice. Exhibit 1 presents the evolution of the model, along with a summary of its strengths and weaknesses over time.

The priority setting model for 2010 attempts to build on the strengths of the 2004 model, while simultaneously addressing its limitations. The new model is presented in Section III (p. 158).

### EXHIBIT 1 History of the HPPC's Priority Setting Model

YEAR	COMPONENTS OF MODEL	STRENGTHS	LIMITATIONS
1995	<ul style="list-style-type: none"> <li>A population's level of risk was determined based on:           <ul style="list-style-type: none"> <li>(1) the odds of being exposed,</li> <li>(2) physiological cofactors, and</li> <li>(3) behavioral cofactors</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Accounted for both biological and social influences on risk</li> </ul>	<ul style="list-style-type: none"> <li>No specific criteria for setting priorities, so prioritization was subjective</li> </ul>
1997	<ul style="list-style-type: none"> <li>Twelve BRPs were created and then ranked by anticipated number of new HIV infections per year</li> </ul>	<ul style="list-style-type: none"> <li>Focused on behavior through identification of populations at risk</li> <li>Established specific epidemiologic criteria for setting priorities</li> <li>Provided an effective tool for planning</li> </ul>	<ul style="list-style-type: none"> <li>It was difficult to implement priorities effectively because existing data did not conform to the BRP categories</li> <li>Did not address important high-risk subpopulations within each BRP</li> </ul>
2001	<ul style="list-style-type: none"> <li>The twelve BRPs from the 1997 model were collapsed into eight BRPs, which were then ranked by anticipated number of new HIV infections per year</li> <li>Subpopulations within each BRP that had 8% or higher seroprevalence were identified and ensured funding</li> <li>BRPs were grouped into three tiers, and recommendations regarding the percentage of funding to be allocated to each tier were made</li> </ul>	<ul style="list-style-type: none"> <li>Focused on behavior through identification of populations at risk</li> <li>Included specific epidemiologic criteria for setting priorities</li> <li>Provided an effective tool for planning</li> <li>Ensured funding for identified high risk populations</li> <li>Guided resource allocation in line with current epidemiology</li> <li>Used data and estimates that were reported in BRP format</li> </ul>	<ul style="list-style-type: none"> <li>The model could be overemphasizing behavioral risks, instead of promoting a holistic approach to HIV prevention that addresses the context of individuals' lives</li> </ul>
2004	<ul style="list-style-type: none"> <li>The eight BRPs were ranked by anticipated number of new infections per year</li> <li>Both subpopulations and cofactors were identified and prioritized for funding, based on prevalence, incidence, and behavioral data</li> <li>BRPs were grouped into four tiers, and recommendations were made regarding the percentage of funding to be allocated to each tier</li> </ul>	<ul style="list-style-type: none"> <li>Focused on behavior through identification of populations at risk</li> <li>Included specific epidemiologic criteria for setting priorities</li> <li>Provided an effective tool for planning</li> <li>Identified high-risk subpopulations and cofactors to be prioritized for funding</li> <li>Used epidemiology to guide resource allocation</li> <li>Used data and estimates reported in BRP format</li> <li>Was accompanied by a community assessment that described the needs of people, rather than BRPs</li> </ul>	<ul style="list-style-type: none"> <li>Grouped all transpeople together without differentiation of behaviors or risks</li> <li>Did not focus on the factors driving HIV infections</li> <li>Was challenging to implement because of the number of BRPs</li> <li>Was based on consensus estimates developed three years earlier</li> </ul>

YEAR	COMPONENTS OF MODEL	STRENGTHS	LIMITATIONS
2010	<ul style="list-style-type: none"> <li>The eight BRPs from the 2004 model are collapsed into five BRPs, which continue to be ranked by the anticipated number of new HIV infections per year</li> <li>High risk behaviors for acquisition of HIV are described for each of the BRPs</li> <li>Drivers are identified for the high-risk BRPs based on the driver's prevalence in those BRPs and their direct link to new HIV infections</li> <li>Subpopulations are identified for all BRPs and prioritized for funding, based on prevalence, incidence, and behavioral data</li> <li>Prioritized cofactors are identified for low-risk BRPs based on prevalence, incidence, and behavioral data</li> <li>Each BRP is assigned a recommended percentage of overall funding</li> <li>The Priority Setting Considerations Box was added to allow the HPPC to respond to HIV prevention community needs by strongly recommending research or assessments on populations or issues with limited data</li> </ul>	<ul style="list-style-type: none"> <li>Focuses on behavior through identification of populations at risk</li> <li>Includes specific epidemiologic criteria for setting priorities</li> <li>Provides an effective tool for planning</li> <li>Identifies high-risk subpopulations and cofactors to be prioritized for funding</li> <li>Guides resource allocation in line with epidemiology</li> <li>Uses data and estimates reported in BRP format</li> <li>Simplifies the BRP model</li> <li>BRPs separate transmales from trans-females, acknowledging the different risks of these populations</li> <li>Emphasizes the importance of substance use risk behaviors among all BRPs</li> <li>Highlights drivers, the most critical factors driving HIV infections city-wide, and prioritizes them for funding</li> <li>Promotes staying ahead of the epidemic by recommending research on populations or issues with limited data</li> </ul>	Still to be determined

## SECTION II Priorities for 2010

### Overview of Priorities

Exhibit 2 presents the priorities for 2010, based on the new priority setting model approved by the HPPC in 2009. (The model is explained in greater detail in Section III.)

The priorities in Exhibit 2 are organized in the following manner:

- Behavioral Risk Populations (BRPs).** BRPs are categories that define people by their risk behavior, not their demographics. BRPs are listed from highest to lowest priority (Exhibit 2).
- Subpopulations.** Within each BRP, the highest-risk subgroups are identified. Unlike BRPs, these groups are defined by demographics (Exhibit 2).
- Drivers.** A driver is an underlying condition that is directly linked to a large number of new infections throughout San Francisco. Drivers are identified for the high-risk BRPs (MSM, TFSM, and IDU), since that is where the bulk of new HIV infections occur (Exhibit 2).
- Cofactors.** Cofactors known to increase risk for HIV are prioritized for the low-risk BRPs (FSM and MSF) (Exhibit 2).
- Resource Allocation Guidelines.** Each BRP is assigned a recommended proportion of funds based on the estimated number of new HIV infections (Exhibit 2). The higher the level of risk in the BRP, as shown by incidence numbers, the higher the recommended level of funding.

- **Priority Setting Considerations Box.** The Priority Setting Considerations Box allows the HPPC to respond to HIV prevention community needs by strongly recommending research or assessments on populations or issues with limited data (Exhibit 2). The HPPC Co-chairs will ensure that a well thought-out and balanced process is in place to determine which items to place in the Box on an annual basis.

## Interpretation of Priorities

Several points are important to remember when interpreting Exhibit 2:

- The HPPC reviewed a wealth of data to prioritize subpopulations, drivers, and cofactors, looking at published studies, needs assessments, anonymous and confidential counseling and testing data, and many other data sources. The subpopulations, drivers, and cofactors were selected based on an objective set of criteria applied to as much relevant data as was available. The background and rationale for each component of the model are described in Section III of this chapter.
- As the epidemic evolves, the HPPC will adjust the priorities accordingly and issue updates to the community.
- The demographic subpopulations, drivers, and cofactors listed in Exhibit 2 are the *highest* priorities for receiving funding; they are not the *only* priorities for HIV prevention in San Francisco. For example, depression is not a driver due to lack of data conclusively demonstrating that it doubles one's risk for acquiring HIV, which is one condition for qualification as a driver. However, this does not mean that HIV prevention programs should neglect addressing mental health issues with their clients.
- Because drivers are linked to a large number of new infections citywide and may be propelling the spread of HIV in San Francisco, it is appropriate that they receive a higher priority than cofactors. Cofactors are highly important within BRPs 4 and 5, but overall they influence a much smaller number of new infections than drivers.
- Although the HPPC reviewed numerous sources of data, it is impossible to review all available data. Therefore, providers are invited to make a case in their proposals for funding subpopulations, drivers, or cofactors that meet the criteria outlined in Steps 2, 3, and 4 of the model (see Exhibit 3, p. 158) but are not listed here. In addition, the HPPC will review new data and studies annually and/or prioritize needs assessments to determine whether other high-risk subpopulations, drivers, or cofactors should be included in the priorities.
- Although a subpopulation, driver, or cofactor is listed, that does not necessarily mean San Francisco needs a program specifically prioritizing that population or issue – it simply means that there is a need to ensure that the population is reached or the driver or cofactor is addressed. (Further guidance on the prioritized strategies and approaches for the various subpopulations, drivers, and cofactors can be found in Chapter 2: Community Assessment, pp. 60–147).
- Exhibit 2 does not illustrate how the subpopulations, drivers, and cofactors relate to each other or how HIV prevention should address them in the real world. Agencies are encouraged to develop programs that address the whole person and the complexity of risk, using the Community Assessment chapter and Strategies and Interventions chapter to guide the focus of programs.

## Drivers of HIV as a Priority

As described in the Introduction (pp. 1-7) and the Community Assessment Chapter, pp. 60-147, addressing drivers of HIV is one of the five priority areas highlighted throughout this Plan. By definition, drivers are factors that independently increase individuals' susceptibility to HIV and are associated with a large number of new infections throughout San Francisco. Unlike cofactors (which apply only to the low-risk BRPs) or subpopulations (which narrow the focus of risk within BRPs), drivers apply to the highest-risk BRPs in which the bulk of new infections occur and propel the spread of HIV as a whole. Because of this, interventions addressing drivers are of particular importance to reducing the spread of HIV in San Francisco and thus should be given special priority. This priority is reflected in the guidelines for implementing interventions to address drivers, which indicate that every HIV prevention program serving a high-risk BRP (MSM, IDU, and/or TFSM) should address at least one driver (see the Strategies and Interventions Chapter, pp. 170-279).

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Programs that address drivers should also acknowledge and address the larger contextual factors that may influence the ways in which individuals are affected by drivers. For example, contextual factors such as racism, sexism, homophobia, depression, loneliness, or lack of access to health care may increase the likelihood that an individual uses substances such as methamphetamine or crack, has an STI or has multiple sexual partners. For this reason, providers should consider the whole person and his or her life experience as a necessary component in addressing drivers of HIV. While HIV prevention efforts alone cannot end contextual factors such as racism, in order for prevention efforts to succeed, the influence of these factors must not be ignored.

## Prevention with Positives as a Priority

Individuals living with HIV have been and continue to be a high priority in every BRP, in addition to high-risk HIV-negative individuals and those who do not know their HIV status. In order to reduce new infections, it is of primary importance that programs reach people living with HIV, as HIV prevention is not just for HIV-negative people. Further, interventions for people living with HIV (including both those who know their status and those high-risk individuals who are unaware that they are positive) should be designed to meet their specific needs.

An overview of how providers can integrate PWP work into their programs appears in the Strategies and Interventions Chapter, p. 192. In addition, the HIV prevention needs of people living with HIV are outlined in the Community Assessment Chapter, p. 63.

For each BRP, the risk is based on who an individual has sex or shares needles with.

BEHAVIORAL RISK POPULATION	HIGH RISK BEHAVIORS FOR ACQUISITION OF HIV
<p><b>PLEASE NOTE</b> that risk of transmission is from right to left. For example TFSM (transfemales who have sex with males) indicates a transfemale at risk of being infected by a male partner.</p>	<p><b>1. MALES WHO HAVE SEX WITH MALES</b> <b>SEXUAL RISK BEHAVIOR:</b> The primary risk for this BRP is HIV- males/transmales engaging in unprotected receptive or insertive anal intercourse with HIV+ males. Transmales may also engage in frontal receptive intercourse with HIV+ males. These risks may be enhanced by the use of alcohol or drugs.</p>
<p><b>MALES WHO HAVE SEX WITH MALES AND FEMALES</b></p>	
<p><b>TRANSMALES WHO HAVE SEX WITH MALES</b></p>	
<p><b>2. INJECTION DRUG USERS</b></p>	<p><b>SUBSTANCE USE BEHAVIOR:</b> The primary risk for this BRP is HIV- individuals who engage in needle sharing with HIV+ individual(s). This risk may be enhanced by the use of alcohol or drugs, injected or not.</p>
<p><b>TRANSMALES WHO HAVE SEX WITH MALES</b></p>	<p><b>SEXUAL RISK BEHAVIOR:</b> The secondary risk for this BRP is HIV- individuals who engage in unprotected anal receptive or insertive intercourse and/or unprotected vaginal intercourse with HIV+ individual(s). This risk may be enhanced by the use of alcohol or drugs, injected or not.</p>
<p><b>3. TRANSFEMALES WHO HAVE SEX WITH MALES</b></p>	<p><b>SEXUAL RISK BEHAVIOR:</b> The primary risk for this BRP is HIV- transfemales who engage in unprotected anal receptive or insertive intercourse and/or unprotected vaginal intercourse with HIV+ individual(s). This risk may be enhanced by the use of alcohol or drugs.</p>
<p><b>FEMALES WHO HAVE SEX WITH MALES</b></p>	<p><b>SEXUAL RISK BEHAVIOR:</b> The primary risk for this BRP is HIV- females who engage in unprotected vaginal intercourse and/or unprotected anal receptive intercourse with HIV+ male(s). This risk may be enhanced by the use of alcohol or drugs.</p>
<p><b>5. MALES WHO HAVE SEX WITH FEMALES</b></p>	<p><b>SEXUAL RISK BEHAVIOR:</b> The primary risk for this BRP is HIV- males who engage in unprotected vaginal or insertive anal intercourse with HIV+ female(s). This risk may be enhanced by the use of alcohol or drugs.</p>

**PRIORITY SETTING CONSIDERATIONS BOX** This box will allow for the HPPC to respond to HIV prevention community needs by strongly recommending research or assessments on populations or issues with limited data that are not adequately covered elsewhere in this model. The HPPC recommends that 1% of prevention funds be set aside to fund items in this box until these needs have been met.

Note: Populations or items in this box will be identified and updated by the HPPC on an annual basis.

PRIORITIZED SUBPOPULATIONS	PRIORITIZED DRIVERS OR COFACTORS	RECOMMENDED FUNDING %
<b>MSM</b>	<b>DRIVERS</b>	<b>MSM, MSM/F</b>
<ul style="list-style-type: none"> <li>• African Americans</li> <li>• Asians and Pacific Islanders</li> <li>• Latinos</li> <li>• Native Americans</li> <li>• Whites</li> <li>• Gay Men</li> <li>• Adults 30 and older</li> <li>• Youth 29 and younger</li> </ul>	<ul style="list-style-type: none"> <li>• Cocaine/Crack</li> <li>• Gonorrhea</li> <li>• Heavy alcohol use</li> <li>• Methamphetamine</li> <li>• Multiple partners</li> <li>• Poppers</li> </ul>	70 – 79%
<b>MSM-IDU</b>	<b>DRIVERS</b>	<b>TMSM</b>
<ul style="list-style-type: none"> <li>• African Americans</li> <li>• Asians and Pacific Islanders</li> <li>• Whites</li> <li>• Bisexual Men</li> <li>• Gay Men</li> <li>• Heterosexually identified men</li> <li>• Adults 30 and older</li> <li>• Youth 29 and younger</li> </ul>	<ul style="list-style-type: none"> <li>• Cocaine/Crack</li> <li>• Gonorrhea</li> <li>• Heavy alcohol use</li> <li>• Methamphetamine</li> <li>• Multiple partners</li> <li>• Poppers</li> </ul>	1 – 2%
<b>TFSM-IDU</b>	<b>DRIVERS</b>	<b>IDU</b>
<ul style="list-style-type: none"> <li>• African Americans</li> <li>• Asians and Pacific Islanders</li> <li>• Latinas</li> <li>• Native Americans</li> <li>• Whites</li> <li>• Youth 29 and younger</li> </ul>	<ul style="list-style-type: none"> <li>• Cocaine/Crack</li> <li>• Gonorrhea</li> <li>• Heavy alcohol use</li> <li>• Methamphetamine</li> <li>• Multiple partners</li> <li>• Poppers</li> </ul>	15 – 20%*
<b>FEMALE-IDU</b>		<i>* Approximately half of these funds should reach MSM-IDUs</i>
<ul style="list-style-type: none"> <li>• African Americans</li> <li>• Native Americans</li> <li>• Youth 29 and younger</li> </ul>		
<b>MSF-IDU</b>		
<ul style="list-style-type: none"> <li>• African Americans</li> <li>• Youth 29 and younger</li> </ul>		
<b>TFSM</b>	<b>DRIVERS</b>	<b>TFSM</b>
<ul style="list-style-type: none"> <li>• African Americans</li> <li>• Asians and Pacific Islanders</li> <li>• Latinas</li> <li>• Native Americans</li> <li>• Whites</li> <li>• Adults 30 and older</li> <li>• Youth 29 and younger</li> </ul>	<ul style="list-style-type: none"> <li>• Cocaine/Crack</li> <li>• Gonorrhea</li> <li>• Heavy alcohol use</li> <li>• Methamphetamine</li> <li>• Multiple partners</li> <li>• Poppers</li> </ul>	5 – 8%
<b>FSM</b>	<b>COFACTORS</b>	<b>FSM</b>
<ul style="list-style-type: none"> <li>• African Americans</li> <li>• Native Americans</li> <li>• Adults 30 and older</li> </ul>	<ul style="list-style-type: none"> <li>• Chlamydia</li> <li>• Crack use</li> <li>• Having an HIV+ partner</li> <li>• Having an IDU partner</li> <li>• Incarceration</li> <li>• Methamphetamine use</li> <li>• Sex work</li> </ul>	1 – 4%
<b>MSF</b>	<b>COFACTORS</b>	<b>MSF</b>
<ul style="list-style-type: none"> <li>• African Americans</li> <li>• Adults 30 and older</li> </ul>	<ul style="list-style-type: none"> <li>• Having an HIV+ partner</li> </ul>	< 10%

## Priority Setting Model for 2010

Exhibit 3 outlines the complete HPPC priority setting model for 2010, which was developed by the HPPC with feedback from providers who were consulted throughout the process and who attended a providers meeting in late 2008. Following Exhibit 3, the rationale and process for each step is explained.

### EXHIBIT 3 HPPC 2010 Priority Setting Model

STEP	PROCESS AND RATIONALE
STEP 1	BRPs are prioritized by incidence number (i.e., the estimated number of new infections per year).
STEP 2	Subpopulations within each BRP are prioritized for funding if they meet <u>one or more</u> of the following criteria.*
	<ul style="list-style-type: none"> <li>a) The subpopulation has an HIV seroprevalence of 8% or higher in San Francisco, as documented in published literature.</li> <li>b) A comparison of the HIV positivity rate among people in a subpopulation to people who are not in the subpopulation yields a statistically significant (<math>p \leq .10</math>) relative risk of 1.5 or greater, based on San Francisco HIV counseling and testing data.</li> <li>c) There is evidence from at least two studies conducted in San Francisco demonstrating that the group is a high-risk subpopulation (i.e., behavioral risk in the subpopulation is greater than that for the BRP as a whole).</li> </ul>
STEP 3	Drivers are prioritized for funding within the highest risk BRPs if they meet <u>both</u> of the following criteria.*
	<ul style="list-style-type: none"> <li>a) A driver has at least 10% prevalence among one of the BRPs where the bulk of new infections occur. These include MSM, IDU, and TFSM.</li> <li>b) A driver is an independent factor for HIV, making a person in a high-risk BRP at least twice as likely to contract HIV compared to someone who is not affected by the driver.</li> </ul>
STEP 4	Cofactors within other BRPs are prioritized for funding if they meet <u>one or more</u> of the following criteria.*
	<ul style="list-style-type: none"> <li>a) The group with the cofactor has an HIV seroprevalence of 8% or higher in San Francisco, as documented in published literature.</li> <li>b) A comparison of the HIV positivity rate among people with a cofactor to people who do not have the cofactor yields a statistically significant (<math>p \leq .10</math>) relative risk of 1.5 or greater, based on San Francisco HIV counseling and testing data.</li> <li>c) There is evidence from at least two studies conducted in San Francisco demonstrating that a cofactor is associated with increased HIV risk (i.e., behavioral risk among people affected by the cofactor is greater than that for the BRP as a whole).</li> </ul>
STEP 5	Guidelines are developed for allocating resources based on incidence numbers, and taking into consideration factors such as funding needed to ensure culturally competent programs for the BRPs, disproportionate affect on populations, etc.
STEP 6	The Priority Setting Considerations Box is completed by developing research recommendations for populations or issues with limited data using the following guidelines:
	<ul style="list-style-type: none"> <li>a) The population(s) or issue(s) must pertain to HIV prevention in San Francisco;</li> <li>b) The population(s) or issue(s) is not covered adequately elsewhere in the Priority Setting Model;</li> <li>c) The HPPC Co-chairs will ensure that a well thought-out and balanced process is in place to decide which items to place in the Box on an annual basis;</li> <li>d) Research findings must be presented back to the HPPC within 12 months after funding is issued. Ideally the research should be publishable.</li> </ul>

\*<sup>ing</sup> means that these subpopulations, drivers, and cofactors will receive first consideration for allocation of resources. Funding for subpopulations, drivers or cofactors is not ensured.

Specific guidelines for acceptable evidence to ensure the validity of the prioritized subpopulations, drivers, and cofactors.

# Step 1

BRPs are prioritized by incidence number (i.e., the estimated number of new infections per year).

### Background and Rationale

The ranking of the five BRPs by incidence number lays the foundation for the allocation of resources based on current epidemiological trends. Evaluations of the priority setting model have indicated that it helps to ensure a consistent approach and smooth implementation of planning and resource allocation at the citywide level.

The 2010 model includes several changes to the BRP categories. In a time of dwindling resources, the HPPC has grappled with the question of whether to include populations with very low HIV seroprevalence in the priority setting model. In order to place emphasis on the greatest prevention needs, several very low-risk BRPs were removed from the model. The HPPC reviewed AIDS case data from 2004 to 2008 in order to identify which sexual behaviors in San Francisco had low seroprevalence.<sup>1</sup> The data indicated very low risk for individuals who have sex with females, a behavior that carries a minimal chance of acquiring HIV in San Francisco. Consequently, 2004 BRPs that reported AIDS cases amounting to less than one half of one percent of the BRP over the four year period were removed from the 2010 model. These groups include Females who have sex with Females (FSF), Females who have sex with Males and Females (FSM/F), Trans who have sex with Females (TSF), and Trans who have sex with Males and Females (TSM/F).

In 2004, the BRPs grouped all trans persons together (e.g., trans who have sex with males, trans who have sex with females, etc.). The 2010 BRPs acknowledge the differences between transmales and transfemales in terms of their sexual risk behaviors, sexual networks, and biological differences by separating these two populations. For example, the 2004 BRP Transpeople who have sex with Males (TSM) was split into Transmales who have sex with Males (TMSM) and Transfemales who have sex with men (TFSM) in the 2010 model.

Although epidemiologic data on TMSM in San Francisco are scarce, behavioral studies indicate that TMSM have similar high-risk sexual behaviors (receptive anal and frontal intercourse) and overlapping sexual networks with gay males, a group with very high HIV prevalence. In addition, transmales experience a thinning and breakdown of tissue due to injecting testosterone that may increase risk for HIV infection. Since BRPs are created and grouped together based on HIV risk behaviors, not data, the HPPC believes that TMSM are most appropriately placed together with MSM in the priority setting model even though the HIV incidence of these two BRPs may be different. In order to address the potential differences in incidence and limited data on population size and prevalence, TMSM have been assigned their own recommended funding percentage, separate from MSM.

A final change to the 2010 BRPs is that IDU populations are grouped together into one BRP. In 2004, IDU populations were identified in four BRPs, which were based on sexual risk behaviors as well as injection drug behaviors. The HPPC grouped the IDU populations into one BRP to simplify the model and make it more user friendly. Because subsets of the IDU BRP have unique subpopulations who are at greatest risk, IDU subpopulations continue to be identified by gender and the genders of their sex partners.

Appendix 1 outlines the differences between the 2004 and the 2010 BRPs.

### Results When Step 1 Is Applied

Exhibit 4 shows the five BRPs in prioritized order based on incidence number. The data source for the estimated number of new infections is the SFDPH AIDS Office Epidemiology Section. The Epidemiology Section developed estimates at the 2006 HIV Consensus Meeting. Although

1 Although AIDS case data tracks infections that happened in the past, over the long term this data is more reliable than data on new HIV infections when looking at trends.

these numbers represent the *anticipated* incidence numbers for 2007-2009, there is no evidence to suggest a shift in the epidemic that would alter the ranking of the BRPs for the duration of this Plan, even if the exact numbers of new infections are slightly different.

#### EXHIBIT 4

#### BRPs Ranked by Incidence Number

BRP	INCIDENCE NUMBER (ANTICIPATED NUMBER OF NEW INFECTIONS PER YEAR)	INCIDENCE NUMBER
1. MSM, MSM/F, TMSM*	772	79%
2. IDU	144	15%
3. TFSM	42	4%
4. FSM	12	1%
5. MSF	5	<1%

\* Reliable incidence data are currently unavailable for TMSM. Please see pp. 80-82 for further explanation.

Note: For a more detailed table summarizing the 2006 Consensus Estimates, see Chapter 1: Epidemiologic Profile, p. 37.

## Step 2

Subpopulations will be prioritized for funding if the subpopulation  
(a) has an 8% or higher HIV seroprevalence; and/or  
(b) has an HIV positivity rate demonstrating a relative risk at least  
1.5 times higher than those outside the subpopulation; and/or  
(c) has a behavioral risk greater than the BRP as a whole.

#### Background and Rationale

The HPPC's inclusion of subpopulations in the Priority Setting Model represents recognition that certain groups are disproportionately affected by HIV or by cofactors that affect HIV risk. Subpopulations help focus prevention efforts within BRPs, since not everyone in a BRP should be assumed to be at risk. HIV prevention programs need to focus on these narrower subgroups in order to maximize the influence of their work.

The prioritized subpopulations are listed in Exhibit 5. However, just because a population is not listed here does not mean it is specifically excluded from consideration. Providers are invited to make a case under this step of the model for prioritizing a population that they serve. This can be done by providing evidence that meet any of the three criteria in a proposal for funding (see Exhibit 3, Step 2, p. 158).

As with drivers, due to funding uncertainties, no subpopulation is "ensured" funding. Instead, these subpopulations are highest priority for funding.

#### Results When Step 2 Is Applied

Exhibit 5 lists the subpopulations prioritized for each BRP. Additional subpopulations may be prioritized during the duration of the 2010 Plan based on (1) new data, or (2) existing data to which the HPPC did not have access during the priority setting process.

EXHIBIT 5 Prioritized Subpopulations for Each BRP

BRP	PRIORITIZED DEMOGRAPHIC SUBPOPULATIONS
1. MSM, MSM/F, TMSM	<ul style="list-style-type: none"><li>• African Americans</li><li>• Asians and Pacific Islanders</li><li>• Latinos</li><li>• Native Americans</li><li>• Whites</li><li>• Gay men</li><li>• Adults 30 and older</li><li>• Youth 29 and younger</li></ul>
2. IDU	<p>MSM-IDU:</p> <ul style="list-style-type: none"><li>• African Americans</li><li>• Asians and Pacific Islanders</li><li>• Whites</li><li>• Bisexual men</li><li>• Gay men</li><li>• Heterosexually identified men</li><li>• Youth 29 and younger</li><li>• Adults 30 and older</li></ul> <p>TFSM-IDU:</p> <ul style="list-style-type: none"><li>• African Americans</li><li>• Asians and Pacific Islanders</li><li>• Latinas</li><li>• Native Americans</li><li>• Whites</li><li>• Youth 29 and younger</li></ul> <p>FEMALE-IDU:</p> <ul style="list-style-type: none"><li>• African Americans</li><li>• Native Americans</li><li>• Youth 29 and younger</li></ul> <p>MSF-IDU:</p> <ul style="list-style-type: none"><li>• African Americans</li><li>• Adults 30 and older</li></ul>
3. TFSM	<ul style="list-style-type: none"><li>• African Americans</li><li>• Asians and Pacific Islanders</li><li>• Latinas</li><li>• Native Americans</li><li>• Whites</li><li>• Adults 30 and older</li><li>• Youth 29 and younger</li></ul>
4. FSM	<ul style="list-style-type: none"><li>• African Americans</li><li>• Native Americans</li><li>• Adults 30 and older</li></ul>
5. MSF	<ul style="list-style-type: none"><li>• African Americans</li><li>• Adults 30 and older</li></ul>

# Step 3

Drivers are prioritized for funding in highest risk BRPs if they

- (a) have at least 10% prevalence among one of the high-risk BRPs where the bulk of new infections occur; and
- (b) are an independent factor for HIV, making a person in a high-risk BRP at least twice as likely to contract HIV as a person not affected by the driver.

## Background and Rationale

The prioritized drivers of HIV are listed in Exhibit 6. This list may continue to evolve as the HPPC gains access to new research, which could provide evidence that additional factors meet the driver criteria or that current drivers no longer meet the driver criteria. Providers are invited to make a case under this step of the model for prioritizing a driver currently not on the list. This can be done by providing evidence that a potential driver meets both criteria (see Exhibit 3, Step 3, p. 158).

Due to funding uncertainties, funding is not necessarily “ensured” for every driver. Instead, drivers are highest priority for funding.

## Results When Step 3 Is Applied

Exhibit 6 lists the drivers of HIV prioritized by the HPPC for 2010. Note that drivers apply only to BRPs 1, 2 and 3; cofactors replace drivers for the lower-risk BRPs. Additional drivers may be identified during the duration of the 2010 Plan based on (1) new data, or (2) existing data to which the HPPC did not have access during the priority setting process.

### EXHIBIT 6

#### Drivers of HIV

BRP	DRIVERS
1. MSM, MSM/F, TMSM	<ul style="list-style-type: none"><li>• Cocaine/Crack</li><li>• Gonorrhea</li><li>• Heavy alcohol use</li><li>• Methamphetamine</li><li>• Multiple partners</li><li>• Poppers</li></ul>
2. IDU	
3. TFSM	

Cofactors will be prioritized for funding in other BRPs if the group with the cofactor

- (a) has an 8% or higher HIV seroprevalence; and/or
- (b) has an HIV positivity rate demonstrating a relative risk at least 1.5 times higher than those without the cofactor; and/or
- (c) has a behavioral risk greater than the BRP as a whole.

# Step 4

## Background and Rationale

Like with subpopulations, the HPPC's inclusion of cofactors in the Priority Setting Model represents recognition that certain groups are especially vulnerable to HIV because of cofactors that affect their HIV risk. Cofactors help focus prevention efforts within BRPs, since not everyone in a BRP should be assumed to be at risk. HIV prevention programs need to focus on these narrower subgroups in order to maximize the influence of their work.

The prioritized cofactors are listed in Exhibit 7. However, just because a cofactor is not listed here does not mean it is specifically excluded from consideration. Providers are invited to

make a case under this step of the model for prioritizing a population that they serve. This can be done by providing evidence that meet any of the three criteria in a proposal for funding (see Exhibit 3, Step 4, p. 158).

As with drivers, due to funding uncertainties, no cofactor is “ensured” funding. Instead, these cofactors are highest priority for funding.

## Results When Step 4 Is Applied

Exhibit 7 lists the cofactors prioritized by the HPPC for 2010. Note that cofactors apply only to BRPs 4 and 5; drivers have replaced cofactors for the high-risk BRPs. Additional cofactors may be prioritized during the duration of the 2010 Plan based on (1) new data, or (2) existing data to which the HPPC did not have access during the priority setting process.

### EXHIBIT 7 Prioritized Cofactors within BRPs 4 and 5

BRP	PRIORITIZED COFACTORS
1. MSM, MSM/F, TMSM	None (See Drivers)
2. IDU	None (See Drivers)
3. TFSM	None (See Drivers)
4. FSM	<ul style="list-style-type: none"><li>• Chlamydia</li><li>• Crack use</li><li>• Having an HIV+ partner</li><li>• Having an IDU partner</li><li>• Incarceration</li><li>• Methamphetamine use</li><li>• Sex work</li></ul>
5. MSF	Having an HIV+ partner

## Step 5

Guidelines are developed for allocating resources.

### Background and Rationale

This step effectively links resource allocation with the epidemiologic data on new HIV infections in San Francisco. The purpose of the resource allocation guidelines is to provide guidance to the HIV Prevention Section when selecting proposals for funding.

## Results When Step 5 Is Applied

The HPPC recommends that resources be allocated to each of the five BRPs as outlined in Exhibit 8. The funding percentages correspond to the estimated percentage of new infections occurring within each BRP. However, in some cases the funding percentages are comparatively greater than the proportion of new infections occurring in those BRPs because a substantial baseline dollar amount is required in order to do meaningful prevention for each group and to ensure culturally competent programming. It is recommended that approximately half of the funds dedicated to IDUs reach MSM-IDUs, since half of all estimated new infections among IDUs occur among this group. Exhibit 8 provides a recommended range of funding for each BRP, as opposed to an exact percentage, since it would be impossible for the HIV Prevention Section to allocate an exact percentage of funds.

RECOMMENDED PERCENTAGE OF FUNDING	
1. MSM, MSM/F, TMSM	MSM, MSM/F: 70 – 79% TMSM: 1 – 2%
2. IDU	15 – 20%* *Approximately half of these funds should reach MSM-IDUs
3. TFSM	5 – 8%
4. FSM	1 – 4%
5. MSF	<1%
Priority Setting Considerations Box	1%

## Step 6

The Priority Setting Considerations Box is completed by developing research recommendations for populations or issues with limited data.

### Background and Rationale

The Priority Setting Considerations Box was added to the 2010 Priority Setting Model to allow the HPPC to respond to HIV prevention community needs by strongly recommending research or assessments on populations or issues with limited data. Doing so will help San Francisco stay ahead of the epidemic and remain flexible in responding to changing HIV risks. Exhibit 9 formally describes the purpose of the Priority Setting Considerations Box.

Following are guidelines for the Priority Setting Considerations Box:

- The population(s) or issue(s) must pertain to HIV prevention in San Francisco;
- The population(s) or issue(s) is not covered adequately elsewhere in the Priority Setting Model;
- The HPPC Co-chairs will ensure that a well thought-out and balanced process is in place to decide which items to place in the Box on an annual basis.
- Research findings must be presented back to the HPPC within 12 months after funding is issued. Ideally the research should be publishable.

### Results When Step 6 Is Applied

The HPPC Co-chairs will assign responsibility for completing the Box by including the task in committees' scopes of work each year. Items in the Box will be reviewed and updated on an annual basis.

## EXHIBIT 9 Priority Setting Considerations Box

### PRIORITY SETTING CONSIDERATIONS

- This box will allow for the HPPC to respond to HIV prevention community needs by strongly recommending research or assessments on populations or issues with limited data that are not adequately covered elsewhere in this model. The HPPC recommends that 1% of prevention funds be set aside to fund items in this box until these needs have been met.

*Note: Populations or items in this box will be identified and updated by the HPPC on an annual basis.*

# Changes in Behavioral Risk Populations from 2004 to 2010

## APPENDIX 1

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### People Who Have Sex with Males

#### 2004 BRPs

- MSM
- FSM

#### 2010 BRPs

- MSM
- FSM

### Injection Drug Users

#### 2004 BRPs

- MSM-IDU, FSM/F-IDU
- FSM-IDU, FSM/F-IDU, FSF-IDU
- MSF-IDU
- TSM-IDU, TSM/F-IDU, TSF-IDU, TST-IDU, TSM/T-IDU, TSF/T-IDU

#### 2010 BRP

- IDU

### People Who Have Sex with Females

#### 2004 BRPs

- MSM/F
- TSM/F, TSF, TSF/T
- FSM/F, FSF
- MSF

#### 2010 BRPs

- MSM/F
- MSF

### Trans Populations

#### 2004 BRPs

- TSM, TSM/F, TSF, TST, TSM/T, TSF/T

#### 2010 BRPs

- TFSM
- TMSM

# Process for Determining Drivers, Priority Subpopulations, and Cofactors

## APPENDIX 2

The HIV prevention community planning process combines scientific methods with community values. The Show Me the Data committee, which was charged with developing the 2010 priority setting model, applied this principle to the prioritization of drivers, subpopulations, and cofactors in the following manner:

### Drivers

1. The committee engaged in several lengthy discussions to create a definition and common understanding of what drivers mean for HIV prevention in San Francisco. The committee decided that a driver is an underlying condition that is directly linked to a large number of new infections throughout San Francisco. By definition, drivers should be factors that are affecting the high-risk BRPs (MSM, TFSM, or IDU), since this is where the bulk of new infections occur.
2. The committee brainstormed a list of potential drivers it thought should be considered based on its members' collective community experience.
3. After much deliberation, factors such as racism, sexism, homophobia, and transphobia were removed from the list of potential drivers. The committee decided that, while highly important, these contextual factors were not proximal enough to the point of HIV transmission to meet the committee's definition of a driver. Other factors, such as unprotected anal intercourse or sharing syringes, were deemed too close to, and nearly synonymous with, the point of transmission, and that these behaviors are covered by BRPs.
4. The committee developed two criteria, described in the model above, to help narrow the definition of drivers and allow for an objective selection process. Given the elevated importance of drivers, criteria were purposefully designed to be more stringent than the criteria for subpopulations and cofactors.
5. The committee then reviewed available research to determine whether each potential driver met both of the criteria proposed in the model. The committee developed specific guidelines for acceptable evidence to ensure the integrity of the prioritized drivers:
  - The research must be conducted in San Francisco.
  - The study can be qualitative or quantitative.
  - The data must be from more than one agency's clients.
  - The study must have a publication date of 2002 or later. If no recent studies can be found, the committee may consider earlier or national studies if relevance to San Francisco can be established.
6. A driver was considered to have met the criteria if it satisfied both of the following conditions:
  - **Prevalence 10% or greater.** A driver has at least 10% prevalence among one of the high-risk BRPs where the bulk of new infections occur. These include MSM, IDU, and TFSM.
  - **Two-fold increase in risk.** A driver is an independent factor for HIV, making a person in a high-risk BRP at least twice as likely to contract HIV compared to someone who is not affected by the driver.

## Subpopulations and Cofactors

1. Committee members brainstormed a list of potential subpopulations within each BRP and cofactors within BRPs 4 and 5 (FSM and MSF) that they thought should be considered for prioritization. The brainstorm drew on members' collective community experience and included everything that had been prioritized in 2004.

2. Several themes were noted among these subpopulations and cofactors. The themes were:

- Sexual orientation;
- Gender identity;
- HIV status;
- Age;
- Race/ethnicity;
- Country of birth;
- Substance use;
- Mental health;
- Incarceration;
- Housing status;
- STIs;
- Socioeconomic status;
- People with high-risk partners; and
- People with HIV+ partners

3. The committee then made a final list of potential subpopulations/cofactors based on these themes. For example, for "age," all age groups were considered for prioritization within each BRP.

4. The committee then reviewed available literature, studies, and data to determine whether each subpopulation or cofactor met any of the three criteria proposed in the model. Once a subpopulation or cofactor was found to meet one of the criteria, no further data was explored for that population (e.g., if a population or a group affected by a particular cofactor was documented to have 8% or higher seroprevalence, a literature review seeking two relevant behavioral studies was not performed). The committee developed specific guidelines for acceptable evidence to ensure the validity of the prioritized subpopulations and cofactors:

- The research must be conducted in San Francisco;
- The study can be qualitative or quantitative;
- The data must be from more than one agency's clients; and
- The study must have a publication date of 2002 or later. If no recent studies can be found, the committee may consider earlier or national studies if relevance to San Francisco can be established.

5. A subpopulation or cofactor was considered to have met the criteria under one of the following conditions:

- **Seroprevalence of 8% or higher.** A published study had to document a seroprevalence of 8% or higher for the specific San Francisco subpopulation or group affected by the cofactor.
- **An HIV positivity rate demonstrating a relative risk at least 1.5 times higher than those outside the subpopulation or without the cofactor.** HIV counseling and testing data had to demonstrate a statistically significant ( $p \leq .10$ ) relative risk at least 1.5 times higher than the comparison group outside the subpopulation or without the cofactor. The reference point used to measure the HIV positivity rate for the comparison group was also from HIV counseling and testing data,

not the 2006 Consensus Meeting estimates used to rank the BRPs. This methodology was used to ensure that the committee compared "apples with apples," as the Consensus Meeting estimates were derived from multiple data sources.

- **Evidence of high-risk behavior.** Two scientifically sound behavioral studies, needs assessments, or other data had to demonstrate that the subpopulation or group with the cofactor was at higher risk than the BRP overall.

6. In situations in which the evidence was not clear-cut, the committee used its best judgment based on the weight of the evidence regarding whether to prioritize a subpopulation or cofactor for funding.





# 4

## Strategies & Interventions



# Chapter 4

## CHAPTER OUTLINE

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<b>Section IV:</b> <b>Health Education and Risk Reduction</b> Magnifies the importance of addressing drivers when developing HIV health education and risk reduction activities for high-risk populations to decrease HIV infections. This section highlights the importance of using strategies and interventions based on a strong scientific foundation to address drivers and cofactors of HIV.....	190
<b>Section V:</b> <b>Prevention with Positives</b> Highlights the essential HIV prevention activities that focus on supporting people living with HIV to achieve health outcomes and reduce HIV infections in San Francisco .....	192
<b>Section VI:</b> <b>Structural Change</b> Describes structural changes and provides possible examples of changes to support HIV prevention .....	195
<b>Section VII:</b> <b>Guide to Strategies and Interventions</b> Provides resources on a range of HIV prevention activities that can be combined and adapted to create programs tailored to the needs of specific populations .....	198
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## PURPOSE

The purpose of this chapter is to provide organizations with the tools needed to design and implement HIV prevention programs. The chapter builds on information provided in Chapter 1: Epidemiology, Chapter 2: Community Assessment, and Chapter 3: Priority Setting to give guidance and tools to develop strategies and interventions that will achieve the goal of averting new HIV infections in San Francisco.

This chapter is divided into the following sections, which are directly linked to the prioritized areas that the HIV Prevention Planning Council (HPPC) believes are necessary to meet targets for reducing infections in San Francisco:

- **HIV status awareness;**
- **Syringe Access and Disposal Programs;**
- **Health Education and Risk Reduction (HERR) activities to address drivers;**
- **Prevention with Positives; and**
- **Structural change**

Additionally, this chapter describes how to create HIV prevention programs to implement one or more of these prioritized areas. Many of the sections of this chapter deal with strategies and interventions within the area of the same name. While HERR activities aim to focus on drivers of HIV, as well as other behavioral prevention needs of individuals at high risk for HIV, drivers can also be addressed through programs and activities using the other content areas.

Providers are invited to use the tools presented in this chapter creatively—in different combinations as appropriate—to meet the larger goal of establishing integrated, coordinated, and responsive HIV prevention programs for San Francisco's at-risk populations. In cases where mandates are attached to specific tools, those are indicated (e.g., under many of the strategies and interventions, implementation requirements are listed). Other information is offered as guidance to programs and can be applied as relevant.

The information presented here summarizes key points in the published literature; thus, further research may be required for more detailed information (references are provided where applicable). This chapter does not provide guidance on the content or curricula for interventions. The types of prevention information, messages, and mode of delivery should be dictated by the specific and current prevention needs of the priority population, as identified by a needs assessment (see Chapter 2: Community Assessment for needs assessments with various populations, pp. 62-114) or other scientifically sound methods. Curricula can also be borrowed and adapted from other programs with demonstrated relevance and effectiveness.

This chapter aims to support the development of strategies and interventions regardless of the funding source. That is, these tools are intended to assist providers seeking resources from a broad range of funders beyond the Department of Public Health including the Centers for Disease Control and Prevention (CDC), Health Resources Services Administration (HRSA), private foundations, and others.

## HOW TO READ THIS CHAPTER

Because this chapter reflects a new approach to HIV prevention in San Francisco, it is recommended that all readers first read through the entire chapter to understand the overall direction. The sections in this chapter present strategies for developing HIV prevention programs, but these approaches are not mutually exclusive.

Readers who only wish to focus on a specific section may review the Chapter Outline for information about specific topic areas.

## TERMS & DEFINITIONS

**COMORBIDITY** The presence or effect of one or more disorders or diseases in addition to a primary disorder or disease.

**DRIVER** An underlying condition that is directly linked to a large number of new HIV infections in San Francisco.

**HIV INFECTED** The term indicates that evidence of HIV has been found via a blood test for RNA. This is also referred to as “acute infection.” It is distinct from HIV-positive as the individual is not positive for HIV antibodies. The person will eventually become HIV-positive, but is in a window period in which antibodies have not yet developed.

**HIV-NEGATIVE** Refers to the absence of antibodies for HIV in a blood or oral fluid test and is synonymous with seronegative. An HIV-negative person can be infected if he or she is in the window period between HIV exposure and detection of antibodies.

**HIV-POSITIVE** This term indicates the presence of antibodies for HIV in a blood or oral fluid test and is synonymous with seropositive. HIV-positive is a legal diagnosis.

**HIV STATUS AWARENESS** An umbrella term for any strategy or service that helps people learn their status.

**INTERVENTION** The type of service or prevention modality a program provides (e.g., social marketing).

**MEDICAL SETTING** Sites with a medical provider (e.g., physician, nurse practitioner, physician's assistant).

**NON-MEDICAL SETTING** Sites that do not have a medical provider (e.g., physician, nurse practitioner, physician's assistant) and do not provide medical services.

**PREVENTION WITH POSITIVES** Any strategy or intervention that addresses the specific needs of persons living with HIV/AIDS (PLWHA).

**STRATEGY** A prevention approach that can be applied across a spectrum of possible interventions (e.g., peer education).

**STRUCTURAL CHANGE** New or modified programs, practices or policies that are logically linkable to HIV transmission and acquisition, and can be sustained over time, even when key actors are no longer involved.

**SYRINGE ACCESS AND DISPOSAL PROGRAMS** Sites that provide a range of sterile equipment and disposal services. Throughout this chapter they are referred to as Syringe Programs.

It is important to remember that this chapter was written to be used by providers to develop programs regardless of funding sources. For the purpose of this chapter, the term “must” indicates that the action is required by policy or law, while “should” refers to a philosophical approach supported by the HPPC. Individuals should review the guidelines set by each funder for additional requirements.

## Background

In the past thirty years, the prevention needs in San Francisco have changed, with a relatively stable state of new HIV infections in San Francisco and effective treatment options that are now available for persons living with HIV/AIDS (PLWHA). In addition, new technologies and changes in laws represent progress and help shape new approaches to HIV. While this is a reason for optimism, the HPPC is faced with determining how to further reduce new HIV infections in the community. Given the current state of HIV in San Francisco and what we know about the communities most affected (as outlined in Chapter 2: Community Assessment) we are now charged with developing programs that engage individuals and communities in activities that help achieve the goal of eliminating HIV.

## San Francisco's Approach to Program Design and Implementation

The HPPC acknowledges that HIV prevention efforts have been successful at preventing new infections because the rate of new infections has leveled off in recent years, and may have even declined somewhat. Despite these successes, the HPPC recognizes the need to intensify prevention efforts and think about new approaches, because the ultimate goal is to drive the number of new infections down even further. Otherwise, with the current infection rates, HIV will remain entrenched in certain San Francisco communities for generations.

In light of the need for new approaches to HIV prevention, the HPPC has embraced the following prioritized areas for HIV prevention for the 2010 plan: HIV status awareness, syringe programs, addressing drivers of HIV (through HERR activities), prevention with positives, and structural change. Prioritizing these areas represents a renewed vision for HIV prevention in order to reduce new HIV infections. The following core principles describe the rationale for developing these prioritized areas and direction for HIV prevention efforts:

- **Widespread awareness with HIV (PLWHA) know their HIV status.** They make decisions and offer decisions for themselves and their partners.
- **Access to sterile syringes reduces acquisition and transmission of HIV, syphilis, and large pathogens.**
- **Reducing substance use reduces HIV risk exposure.**
- **Lower HIV viral load associated with lower transmission risk.**
- **Addressing comorbidity such as viral hepatitis, sexually transmitted diseases, and tuberculosis contributes to HIV prevention.**
- **HIV prevention activities have a greater chance of being successful when community and community leaders (i.e. local faith leaders, city government, and other community organizations) work together to achieve a common goal that advances the broader context of health.**

The HPPC recommends that organizations select strategies and develop interventions that support the abovementioned prioritized areas. To support these prioritized areas, agencies should address drivers and cofactors of HIV, implement structural changes, and adhere to principles for program design and implementation. More information about how to support the prioritized areas follows.

## Addressing the Drivers and Cofactors of HIV

In order to reduce new infections, the HPPC recommends that providers develop HIV prevention programs to address at least one of the drivers of HIV in San Francisco. (Please see p. 115 and p. 166 for more information on drivers). These recommendations do not stand in isola-

tion and should be applied within the context of the overall principles for HIV prevention in San Francisco described above. It is important to note that addressing drivers directly is often necessary but not sufficient to prevent HIV in San Francisco. The HPPC recognizes that programs should also address the larger contextual factors and structural issues that influence how drivers affect individuals. For more information on contextual factors, please see the Chapter 3: Priority Setting, p. 155.

Prevention providers should consider the following principles:

- When addressing a driver with an individual, programs should be prepared to address the whole person. That is, programs should address the context of the person's life (e.g., depression, substance use, lack of access to medical care) and the person's vulnerability to HIV and capacity for engaging in HIV prevention activities.
- It is recommended that HIV prevention programs that aim to serve high-risk Behavioral Risk Populations. Men Who Have Sex With Men (MSM), Injection Drug Users (IDUs), and Transfemales Who Have Sex With Males (TFSM) should address at least one driver, as appropriate.
- Drivers can be addressed by developing a new program at an agency that prioritizes the specific affected population, or services to address drivers may be integrated with other existing programs at the agency (e.g., if methamphetamine use is a driver, an agency may create a peer counseling program to address methamphetamine use among MSM or an agency with an existing program for MSM may build discussions of methamphetamine use into a current workshop or group).
- When addressing drivers with an individual, programs should document all of the drivers and cofactors that are influencing the individual and demonstrate that they are connecting the client to services that appropriately meet their needs.

## Structural Changes

San Francisco recognizes the influence of policies and the broader environment on supporting HIV prevention, and the HPPC has identified examples of structural changes that reflect this philosophy (see Section VI of this chapter, pp. 196-197). To promote HIV prevention, system-level changes (e.g., programs, practices, policies) are necessary, as these changes are ultimately those that will make it easier for people to remain healthy in their communities.

## Principles for Program Design and Implementation

The principles that underlie the creation of effective programs for San Francisco populations reflect the latest science, as well as San Francisco's core values about community-supported HIV prevention. HIV prevention providers play a role in ensuring that the HIV prevention network of services reflects these principles. Providers should incorporate the following elements into their programs.

**Community Focus.** There are multiple ways that providers can bring a community focus to HIV prevention, as described below. Provider experience and information from the Community Assessment Chapter (pp. 60-147) are important to ensure a community focus.

- All prevention programs should strive to stimulate community involvement through cultivation of community trust over time (e.g., staff should be nonjudgmental, open, compassionate, trustworthy, responsive).
- Community members should be involved in the development and implementation of programs.
- Both the content and method of delivery of an intervention should be culturally appropriate for the priority population. This requires an understanding of, respect for, and attention to how people from a cultural group communicate and interact, as well as their values and beliefs. Cultural competency can be defined in many ways and is not limited to race/ethnicity and language.

- In some settings, providing items such as food, vouchers, transportation, t-shirts, or condoms, may be useful for recruiting some priority populations to participate in HIV prevention programs and can go a long way toward building community trust. Likewise, attention to recruitment and retention of staff and volunteers is critical for the continuity of programs, which contributes to agency credibility and helps promote trust.

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Some priority populations, or subgroups within a population, can be very difficult to access. Groups that often get missed with conventional HIV prevention efforts include people who are socially marginalized, visually or hearing impaired, people with developmental disabilities, people who do not read, people who speak English as a second language, and people who speak non-English languages. Providers should use creative means to reach these groups.

**Community-Driven Norms.** San Francisco recognizes that HIV prevention activities are often developed by communities and outside of formal health promotion institutions. As a result, the HPPC encourages organizations to provide opportunities for community-driven program design and to work with people to enhance community-created prevention practices with evidence of effectiveness. One example of a community-created response is seroadaptation, which individuals have been practicing for a number of years in an attempt to reduce the risk of contracting and/or transmitting HIV. The HPPC encourages additional research to determine the effectiveness of seroadaptation as an HIV prevention strategy. For more information about seroadaptation, please see Chapter 2: Community Assessment, p. 67.

**Cost Effectiveness.** An economic analysis of an intervention or program can determine whether it is cost-saving (i.e., the cost of the intervention per HIV infection averted is less than the lifetime cost of caring for a person with HIV) or cost-effective (i.e., the cost per HIV infection averted compares favorably with other preventive services, such as smoking cessation) (CAPS fact sheet 2002). In San Francisco, programs should be as cost-effective as possible. Some studies suggest that certain interventions and strategies are cost-effective, such as syringe programs, and this is indicated throughout the chapter.

**Defining Your Priority Population.** It is important that our prevention efforts are focused on priority populations at highest risk for HIV. The Community Assessment Chapter (pp. 60-147) presents information on specific populations, and the Priority Setting Chapter (pp. 150-168) highlights priority behavioral risk populations and subpopulations in San Francisco. This information can be used by an organization to identify a priority population for an HIV prevention intervention, as well as factors to address in the intervention.

**Documentation.** HIV prevention programs in San Francisco should include documentation of their efforts. Collecting, recording and reporting pertinent data is essential to developing sustainable and effective HIV prevention programming. The data and other information collected may then be used for planning services, invoicing, and evaluation of programs. It is important to note that client level data is protected under the California Health and Safety Code 12105(a) (see Appendix 1, p. 275 for information). Program evaluation allows providers to see how well a program is doing and how it could be improved. For more information on evaluation, see Chapter 5, pp. 282-307.

**Harm Reduction.** The San Francisco Health Commission adopted a Harm Reduction Policy for substance use, sexually transmitted infections (STIs) and HIV prevention and treatment services, and/or programs that serve drug users. For more information about San Francisco's policy, please see <http://www.sfdph.org/dph/comupg/oservices/mental-hlth/SubstanceAbuse/HarmReduction/default.asp>. A harm reduction approach to prevention accepts that harmful behavior exists, and the main goal is to reduce the negative effects of the behavior rather than ignore or pass judgment on the person or the behavior. The term "harm reduction" is used most often in the context of drug use, but the approach can be used with sexual risk behavior as well. A harm reduction approach encourages safer drug use or sexual practices among those engaging in high-risk behaviors and acknowledges the social and environmental factors that affect drug use and high-risk sexual behaviors, such as poverty.

racism, and stigma. Harm reduction also encompasses prevention practices such as seroadaptation. For more information on harm reduction, please see p. 222.

**Linkage.** HIV prevention in San Francisco is part of a larger system of health and social services. In order for HIV prevention to be effective, each HIV prevention program should have in place a system to actively engage a client in order to enroll them in services provided by the agency or by linking the client to appropriate resources (e.g., HIV status awareness). Linkage goes beyond handing out information or a phone number; the process includes providing support to the individual to access the services he or she is being referred to, as well as tracking referrals and referral follow-up. For more information on linkage, please see p. 242.

**Prevention Messages.** Prevention messages should be suitable to the priority population, accurate, consistent, and delivered with appropriate frequency for maximum effect. Providers should be aware of the requirements established by each funding source. This is important regardless of intervention, and providers serving similar populations should collaborate with each other to ensure consistency in the messages. Attention to over-saturation is important, because hearing the same message over and over may lead to weakening its effect. Needs assessments and formative research can help determine when it is time to change a prevention message or give it a new look. For example, a community survey or focus groups could solicit participants' opinions about current social marketing campaigns, which could reveal if and how the priority population is responding to a particular message.

**Program Collaboration and Service Integration.** Program Collaboration and Service Integration (PCSI) is a mechanism of organizing and blending interrelated health issues, separate activities, and services in order to maximize public health impact through new and established linkages between programs to facilitate the delivery of services. Providers should focus on improving collaboration in order to enhance integrated service delivery at the client level, or point of service delivery. The goal of PCSI is to provide prevention services that are holistic, evidence-based, comprehensive, and high quality to appropriate populations at every interaction with the health care system. Additional information can be found at [www.cdc.gov/nchhstp/programintegration/Default.htm](http://www.cdc.gov/nchhstp/programintegration/Default.htm).

**Referrals.** For many, HIV is not their main priority; referrals are necessary because if a person's basic health and social service needs are not being met, HIV prevention is less likely to be effective. Providing referrals for services such as HIV testing, STI detection and treatment, mental health, substance use prevention and treatment is important. Referrals are often a necessary step for people to receive needed services, and whoever delivers an intervention should be trained in community resources and referral mechanisms. The development of referral relationships should consider both individual needs (i.e., linking individuals with needed services) and community needs (i.e., creating change at the systems level to link underserved communities with the service system). For more information on referrals, please see p. 188.

**Science-based Programs.** HIV prevention programs should have a strong scientific foundation. Program designs should be based on a needs assessment (i.e., a process that uses research methods to collect and analyze information to determine the educational and service needs of a population). Needs assessments reports for many priority populations are already provided in this Plan (see Chapter 2: Community Assessment, pp. 62-114). Providers may find it necessary to conduct additional evaluation efforts and/or research with their specific priority populations to assess risk behaviors, identify barriers to accessing services, and explore possible interventions and strategies with evidence of effectiveness. A needs assessment may include primary data (e.g., interviews) and/or secondary data (e.g., literature review). Once a needs assessment is completed, programs should be designed that include the following elements:

- A clearly defined priority population (e.g., defined by behavioral risk population [BRP], subpopulation, race/ethnicity, gender, age);
- Clearly defined overall goals and specific objectives;
- A theoretical foundation that guides practice;

- Defined and measurable effectiveness outcomes, such as the number of new HIV infections diagnosed or a reduction in high-risk sexual behaviors; and
- A realistic timeline for implementing activities and achieving objectives.

Finally, program implementation and program effectiveness should be evaluated using scientific tools, such as a survey. (For more on evaluation, see Chapter 5: Evaluation, pp. 282-307.)

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## SECTION II

# HIV Status Awareness

### Goal of HIV Status Awareness Programs

- To promote knowledge of HIV status and link all people who have HIV to medical care and support services.

### Why HIV Status Awareness is a Priority

HIV status awareness is one of the cornerstones of HIV prevention. When people know their status, it opens up opportunities for appropriate linkages to medical care and support services which, for PLWH, can prolong life expectancy and increase overall quality of life. In addition to this, people with HIV who know their status are more likely to engage in healthy behaviors and are less likely to unknowingly transmit HIV to others.

### Definition

HIV status awareness is the umbrella term for multiple strategies or services that help people know their HIV status. These strategies and services usually refer to HIV testing, partner services, and linkage to care, but these three areas can also include HIV health education, risk reduction counseling, public information and public/private partnerships when those activities facilitate HIV status knowledge. HIV status awareness also encompasses HIV RNA (ribonucleic acid) testing, which helps people know their HIV status shortly after exposure and before they develop HIV antibodies.

### Introduction

This section describes the tools necessary for providers to develop HIV status awareness programs. HIV status awareness programs have laws and regulations pertaining to HIV testing, and therefore must meet particular requirements. Even so, providers can tailor status awareness programs to their priority populations by supplementing the components required by law with additional

### Key Terminology

#### Acute HIV infection

This term indicates that HIV RNA has been detected in the blood prior to the detection of antibodies. It is distinct from HIV-positive because the individual is not positive for HIV antibodies. The person will eventually become HIV-positive, but is in a window period in which antibodies have not yet developed.

#### HIV-positive

This term indicates the presence of HIV antibodies in a blood or oral fluid test and is synonymous with seropositive. Currently, testing HIV antibody positive is required for a diagnosis of HIV.

#### HIV-negative

Refers to the absence of HIV antibodies in a blood or oral fluid test. Synonymous with seronegative. An HIV-negative person can be infected if he or she is in the window period between HIV exposure and detection of antibodies – the acute infection period.

*Source: UNAIDS' Terminology Guidelines (February 2008)*

activities that are most appropriate for reaching their intended populations. In this way, providers can develop flexible and creative models. The subsections that follow provide a descriptive background and required and supplemental elements for providers to incorporate to build status awareness programs. The intent of this approach is to foster creativity and promote different options for testing models to reach a variety of individuals, including those who do not perceive themselves to be at risk, late-testers, and substance users. This framework aims to address barriers to people getting tested for HIV in San Francisco.

New terms, technology, and protocols are continuously being developed for HIV testing, which results in new terminology for describing HIV status. Key terminology is presented in the box on the previous page. For information about new HIV prevention technologies, please see Section VII, p. 234.

## Background

The overall vision of HIV status awareness is to ensure that all San Franciscans, particularly those who are at high risk for HIV, have accurate knowledge of their status and opportunities to get tested and retested easily and as needed. In addition to helping people learn their status, when individuals are found to have HIV, status awareness programs aim to ensure that clients are linked to medical care and other appropriate support services. Therefore, the San Francisco HPPC recommends HIV testing among high-risk individuals at least every six months.

### HPPC's Vision for HIV Status Awareness

- High-risk individuals should test for HIV at least every six months.
- HIV testing should be widely accessible, client-centered, and responsive to the community.

Moreover, the HPPC supports making HIV testing routine and widely accessible and integrating HIV testing with other health services, such as sexually transmitted infections (STIs) testing and viral hepatitis services. The HPPC further supports RNA testing to help people know their status at the acute stage of infection.

Although pre-test counseling has traditionally been paired as a standard requirement with HIV testing and linkages, San Francisco acknowledges that options for a variety of testing models (e.g., with or without counseling) are necessary in order to reach the most people. Providing clients with options for HIV education, as well as offering varying levels of intensity of counseling, are recommended.

Partner services are an additional component of HIV status awareness. The intent of partner services is to reduce HIV transmission by offering an individual who is HIV-infected avenues for informing their sexual and/or syringe-sharing partners of possible exposure to HIV, and by providing HIV status awareness interventions and other services to those partners. (For more information on Partner Services, see p. 193).

## Why Focus on HIV Status Awareness?

Helping people know their HIV status is an effective HIV prevention intervention and serves to link people with HIV to medical care and partner services. Getting persons tested as soon as possible after exposure to HIV allows individuals to access life-prolonging treatment and services if they are found to be HIV infected, and reduces the chances that they will unknowingly transmit HIV to others. The HPPC acknowledges that some individuals may not want to test and encourages providers to support these individuals until they are ready for an HIV test.

Status awareness programs are also important to support, as accurately as possible, knowledge of HIV status, as individuals may be practicing seroadaptation to make decisions about sexual risk behaviors. Because an estimated 15-20% of individuals in San Francisco who have HIV do not know that they are infected, promoting accurate knowledge of HIV status is critical to preventing new HIV infections in the city. San Francisco continues to have nearly 1,000 new HIV infections each year, and status awareness programs offer the opportunity to assist these

individuals in learning their status in order to ensure linkage to care and prevent further transmission. In 2006, the CDC released updated guidelines for HIV testing, recommending that HIV testing efforts not only be expanded to include routine screening in health care settings but also that all people between the ages of 13 and 64 should be tested at least once, and that individuals at "high risk" should be tested regularly (Branson et al 2006).

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Focusing efforts on status awareness also aims to address the number of individuals who are "late testers", defined here as receipt of a positive HIV test one year or less before the diagnosis of AIDS. For more information on late testers, please see Chapter 2: Community Assessment, pp. 110-113.

## Menu of Elements

### REQUIRED ELEMENTS

LISTED IN ORDER  
OF REQUIRED  
PROTOCOL

As described previously, HIV status awareness programs are driven by certain requirements mandated by law. San Francisco supports supplementing these requirements with additional activities to creatively reach priority populations. The table below lists each of the required elements for HIV status awareness programs, as well as supplemental elements. In the table, the required elements are those that status awareness programs must include and are based on California laws and regulations. In order to expand the flexibility of status awareness programs, organizations are encouraged to add supplemental elements to tailor their programs to meet the needs of the populations that they aim to serve. The supplemental elements are not specific only to HIV status awareness, and are applicable to multiple prioritized areas. Please refer to the Guide to Strategies and Interventions (Section VII) for additional information about specific supplemental elements as well as additional strategies and interventions to incorporate when developing programmatic activities.

REQUIRED ELEMENTS	SUPPLEMENTAL ELEMENTS
<ul style="list-style-type: none"><li>• Consent</li><li>• HIV Antibody Testing</li><li>• Disclosure of HIV Test Results</li></ul>	<ul style="list-style-type: none"><li>• HIV Prevention Education (p. 182)</li><li>• HIV RNA Testing (see p. 182)</li><li>• Individual Risk Reduction Counseling (see p. 182)</li><li>• Methods to Increase Access to Testing for Underserved Populations (p. 183)</li><li>• Prevention Case Management (see p. 184)</li><li>• Sexually Transmitted Infections (STI) Testing (see p. 184)</li><li>• Viral Hepatitis Services (see p. 184)</li></ul>

The following sections provide detailed descriptions of each required and supplemental element

### Consent

Consent means that a person has been fully informed and understands the risks and benefits of the test and agrees to take an HIV test. With changes in laws and efforts to expand testing into medical setting, options for consent have changed. Options for obtaining consent include the following:

- **Written Consent** (Health and Safety Code Section 120990) – a separate consent form signed by clients to document that he or she agrees to test for HIV. This process is required for non-medical sites conducting confidential HIV testing.
- **Verbal Consent** (Health and Safety Code Sections 120885-120895) – a verbal confirmation provided by a client to ensure that he or she agrees to test for HIV. This process is required for non-medical sites conducting anonymous HIV testing.
- **Opt-Out Consent** (Health and Safety Code Section 120990) – a process that may be used by medical providers using a general consent to conduct medical services, where they can inform the client that an HIV test is planned and that the client has the right to decline

the test. The information that the test is planned may be given to the client verbally or in writing.

The objective of obtaining consent is to ensure that individuals who test for HIV do so voluntarily and with full knowledge that the test will be conducted and an understanding of what results mean. Providers who conduct HIV testing are required to comply with state laws in ensuring consent. The law requires that a medical care provider document when clients decline the test in their medical records. However, best practice dictates that medical providers document a client's acceptance of an HIV test in the medical record to keep a record of the client's agreement and testing history.

## HIV Antibody Testing

HIV antibody testing refers to an FDA-approved test that detects HIV antibodies, which generally develop within six months following HIV infection. Options for antibody testing are subject to change, and are based on testing technology approved by the FDA. At the present time, the following two options are available:

- **Rapid HIV antibody testing** refers to an FDA-approved HIV antibody test (using fingerstick whole blood, oral fluid, or venipuncture whole blood/plasma) that has results in up to 20 minutes. Tests that detect the presence of antibodies to HIV are considered reactive, and these results on a rapid test must be verified by additional testing.
- **Conventional HIV antibody testing** refers to an HIV antibody test using venipuncture blood or oral fluid specimens that are sent to an off-site laboratory for processing. Results usually take one to two weeks.

Providers who conduct HIV testing must adhere to protocols and algorithms defined by SFPDH and the law (Health and Safety Code Section 120917) for both rapid and conventional testing. Agencies should consider community needs and the organization's capacity when selecting testing technology.

## Disclosure of HIV Antibody Test Results

### Negative HIV Antibody Test Result

In the case of a negative antibody HIV test result, the client is informed that the test result did not indicate the presence of HIV antibodies. Information about the window period is emphasized with the client at the time of result disclosure. Options based on approach are as follows:

- **Face-to-face** - Sites conducting anonymous (Health and Safety Code Sections 120885-120895) and/or confidential testing in non-medical settings must provide results to clients in person.
- **Results sent by phone or mail** - Sites conducting confidential testing in medical settings may provide an HIV negative result over the phone or by mail.

The objective of disclosing negative HIV test results is to ensure individuals testing negative for HIV learn their test results and what they mean. Providers who conduct HIV testing in non-medical settings must provide test results face-to-face, in private, one-on-one sessions. While medical settings are encouraged to provide negative results face-to-face, results may be provided according to the institution's policy for disclosing negative test results. The law (Health and Safety Code Section 120895) prohibits the electronic delivery of clinical laboratory test results or any other related results to the client for HIV antibody tests regardless of authorization.

### Positive HIV Antibody Test Result

The CDC, working with national organizations of laboratory professionals, sets the standard algorithms for how HIV is diagnosed in the United States.

With conventional HIV antibody testing, the client is informed that the test is positive for HIV antibodies, if a positive conventional test result is documented by the laboratory running the test.

With a rapid HIV antibody test, the client is informed that the test is reactive if the test detects HIV antibodies. If the result is reactive on a rapid HIV test, further tests must be run to confirm the result and diagnose HIV.

The objective of disclosing positive HIV antibody test results is to ensure individuals testing positive for HIV learn the results and are immediately linked to medical and partner services to reduce morbidity and mortality, and to prevent HIV transmission to others. Providers conducting HIV testing are required to provide all positive test results to clients and to do so with counseling, linkage to medical care, and discussion of partner services (see p. 277 for description and definitions), including partner elicitation for partner notification, when that option is chosen by the client. Verifying and documenting linkage to medical care and partner services discussions may take a number of contact visits or phone calls to complete. All providers funded or working under agreement with HPS are required to follow the HPS Linkage and Partner Services Protocol (please see [http://sfhiv.org/testing\\_coordinator\\_resources.php](http://sfhiv.org/testing_coordinator_resources.php)). Medical providers should be aware that the law permits, but does not require, a treating physician to inform a person's sexual partner, and/or syringe sharing partner that they may have been exposed to HIV. The medical provider cannot disclose any identifying information about the person who is HIV infected.

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The following are required for both rapid and conventional testing approaches:

- **Follow-up** if client tests reactive (on a rapid HIV test) or HIV positive (on a conventional HIV test) and does not return for their result.
- **Disclosure of results** to the client, including counseling as to what the result means and what options and support are available to the client.
- **Linkage to medical care** (e.g., assistance in making a medical appointment, verification of whether the appointment was kept and medical workup completed).
- **Partner services** supporting clients with HIV disclosure to sexual and/or syringe sharing partners to alert them of possible exposure.

Options for partner services include:

- Self-disclosure and referral. The client discloses their HIV status to their partner and refers them to medical services. This is the most common method of partner notification.
- Dual-disclosure and referral. The client discloses their HIV status to their partner and refers them to medical services. The partner discloses their HIV status to the client and refers them to medical services.
- Partner Elicitation. The client discloses their HIV status to their partner and refers them to medical services. The client also asks the partner to disclose their HIV status to their own sexual partners.
- Partner Notification. The client discloses their HIV status to their partner and refers them to medical services. The client also discloses their HIV status to their partner and refers them to medical services.
- Internet partner notification (IPN). The client discloses their HIV status to their partner and refers them to medical services. The client also discloses their HIV status to their partner and refers them to medical services.

*digital or Content will include language that urges the identified partner to contact the service on “urgent health matter.” When the client responds, he or she is encouraged to be tested/treated. IPN protocols include sending an email to the partner directly or contacting the partner through a social/sexual website. Clients can also notify partners either confidentially or anonymously using [www.inSPOT.org](http://www.inSPOT.org) (website specifically for partner notification).*

For more information about disclosure and partner services, please see p. 193.

## HIV Prevention Education

### SUPPLEMENTAL ELEMENTS (LISTED ALPHABETICALLY)

HIV Prevention Education (Health and Safety Code Section 120846), in this context, is education about HIV and HIV prevention provided by the testing agency to individuals seeking testing services. HIV Prevention Education is meant to be brief, informational, and is not intended to be an in-depth, client-centered pre-test counseling session. The objective of HIV Prevention Education is that clients testing for HIV have basic information about HIV and HIV transmission so that they can make informed decisions and reduce their risk of becoming infected.

The education may be provided to individuals (one-on-one), couples, or small groups (a group of 3-10 clients), and methods for offering HIV prevention education may take the following forms:

- **Computer/Handheld devices** - education provided electronically using an approved module.
- **DVD/Video** - education provided by using a video(s) that has been approved through materials review.
- **Staff-led** - education provided by a counselor/educator.
- **Web-based** - education provided through the Internet using an approved web module.

Providers who include this element in their HIV testing program should provide specific evidence-based strategies to meet the needs of their priority population. Providers should be aware that their staff may need to be certified to provide this service, in accordance with the State Office of AIDS requirements for counselor/health educator certification.

## HIV RNA Testing

Because this is new technology that is costly, use of HIV ribonucleic acid (RNA) testing must be considered for specific populations at highest risk. HIV RNA testing refers to a blood test that detects the virus by detecting its genetic material, RNA. These tests can detect the virus shortly after infection, the so-called “acute infection” phase. During acute infection, viral load is typically very high, making persons with acute HIV especially likely to transmit HIV if they engage in unprotected sex or syringe-sharing. The goal of RNA testing is to detect persons in the acute phase of infection, link them to care, and provide testing to their partners.

Providers seeking to include RNA testing in their HIV testing program should serve a population at high risk for HIV. Organizations that conduct RNA testing must follow all requirements and laws for HIV testing.

## Individual Risk Reduction Counseling

Individual Risk Reduction Counseling (IRRC) refers to a client-centered, interactive risk reduction counseling model conducted with HIV testing. The objective of IRRC is to explore with the client those behaviors that may put them at risk, develop and negotiate steps to help reduce those risks and ultimately help prevent the acquisition and/or transmission of HIV by this client. Traditionally this has been known as pre-test counseling, but new approaches to testing technology have provided an opportunity for the counseling to be conducted before or during testing or as an additional service to the client.

In the context of HIV testing, components of an IRRC session should include:

- Discussing reason(s) for testing;
- Identifying specific sexual/syringe sharing behaviors that put the client at risk for HIV/STIs, including any drivers;
- Exploring, problem solving and negotiating steps the client would be willing to take to reduce those risks;
- Reviewing and exploring the "window period" for antibody/RNA detection;
- Assessing the client's STI/viral hepatitis;
- Determining the client's appropriateness for RNA testing;
- Reviewing information on HIV transmission and ways to prevent infection, including condom use, reducing numbers of partners, and not sharing syringes;
- Exploring injection support (including syringe provision) and discussing safer injection and linkage to syringe programs for IDUs;
- Exploring sexual communication with partners in order to make safer sex decisions including disclosure of client and partner status in order to make safer sex decisions;
- Exploring testing outcomes and their effect on the client; and
- Identifying and providing linkages and referrals.

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Providers who include an IRRC session as a part of their HIV testing services must certify counselors in accordance to the State Office of AIDS requirements for counselor certification. For more information about IRRC, please see p. 244.

## Methods to Increase Access to Testing for Underserved Populations

This refers to activities conducted outside a more traditional, institutional setting for the purposes of providing direct health education, risk reduction services, referrals, and/or testing services. The objective of these methods is to engage at-risk underserved individuals and link them to HIV status awareness services.

Options include:

- **Mobile Testing** - testing conducted through the use of a mobile vehicle.
- **Outreach** (e.g., Venue-Based Individual Outreach, Recruitment and Linkage, social networks).
- **Venue-Based Testing** - testing conducted in venues outside of the primary testing site.

Providers who include these methods in their HIV testing program should provide specific evidence-based strategies to reach their priority population(s). Methods should be evaluated and demonstrate that they increase testing among underserved populations. Organizations conducting mobile or venue-based testing must follow all requirements and laws for HIV testing.

Please see p. 240 for additional information about Venue-Based Individual Outreach and pp. 242-243 for Recruitment and Linkage.

For more information about social networks, please see the CDC Compendium of Evidence-Based HIV Prevention Interventions (<http://www.cdc.gov/hiv/topics/research/prs/evidence-based-interventions.htm>).

## Prevention Case Management

Prevention Case Management (PCM) is a client-centered HIV prevention activity with the fundamental goal of promoting the adoption and maintenance of HIV risk-reduction behaviors by clients with multiple, complex challenges and risk-reduction needs, as well as clients that need additional support in addressing issues of disclosure and linkage to medical care and other support services.

Providers seeking to include PCM in their HIV status awareness program should develop criteria for who should receive PCM. Organizations wishing to add this element should consider providing infected individuals with ongoing assistance with disclosure, partner services and linkages to medical and other support services, while supporting high-risk clients who do not have HIV with access to ongoing support and linkages to additional care. Please refer to p. 245 for additional information about PCM.

## Sexually Transmitted Infections (STI) Testing

STI testing refers to testing and treatment for sexually transmitted infections, in addition to on-site dispensation of medications to treat, STI patient education and partner notification and treatment services. The goal of including STI testing is to integrate testing services for individuals who may be at risk for both HIV and other STIs due to sexual activities.

Providers who propose to include STI testing in their HIV testing program should serve populations at high-risk for both HIV and other STIs, and should conduct STI testing in combination with HIV testing. In order to maximize resources, medical sites with alternate billing mechanisms should integrate STI testing into their current medical care services. Non-medical settings requesting resources or support to conduct STI testing should have a manner to ensure onsite treatment and/or a clear linkage to treatment services. For more information on STI testing, please see p. 277.

## Viral Hepatitis Services

Hepatitis means liver inflammation. Viral hepatitis (e.g., hepatitis A, B, and C) means that a person has liver inflammation due to a virus. Viral infection of the liver results in swelling and reduced functioning. The goal of providing hepatitis testing and/or vaccination in conjunction with HIV testing is to integrate testing services for individuals who may be at risk for both infections due to sharing injection equipment and/or sexually-associated activity.

Providers seeking to include this element in their HIV testing program should serve populations at high risk for viral hepatitis and should conduct HIV testing in conjunction with hepatitis services. Please note that the law (Health and Safety Code Section 123148) specifically prohibits the electronic delivery of clinical laboratory test results or any other related results to the client for the presence of antigens indicating a hepatitis infection, regardless of authorization. For more information on viral hepatitis services, please see p. 265.

### Goal of Syringe Programs

- To ensure access to sterile syringes and injection equipment in order to eliminate the transmission of bloodborn viruses among people who inject drugs and their sexual partners.

## Why Syringe Programs are a Priority

The HPPC embraces a harm reduction philosophy for HIV prevention in San Francisco, meaning that people who inject drugs should have access to sterile equipment, safe disposal, and information that will allow them to minimize risks associated with their drug use behavior. The commitment to harm reduction, paired with the evidence that syringe access is an effective HIV prevention strategy and highly cost-effective, make these programs an HIV prevention priority. Because of the evidence supporting the prevention of acquisition and transmission of HIV through access to sterile syringes, as outlined in Section I, syringe programs are an important HIV prevention strategy.

## Definition

Syringe programs are fixed-site, venue-based, and/or pedestrian services that provide a range of sterile injection equipment and safer sex supplies and provide education, syringe disposal services, brief interventions and referral services.

## Introduction

Similar to HIV status awareness programs, syringe access and disposal programs (referred to as syringe programs, previously called needle exchange) are guided by mandates, but may be developed creatively by supplementing the requirements with additional components to best meet the needs of an identified priority population. San Francisco maintains a strong commitment to syringe access because it reduces HIV and does not increase substance use (De Jarlais et al 1996, Watters et al 1994).

This section of the chapter will focus on information for organizations interested in establishing a syringe program. In order to foster creativity and promote varied approaches for syringe programs, the following subsections provide the community with a framework of required and supplemental elements to develop a syringe program model. This format enables providers to design a program that is tailored to and most appropriate for a particular priority population.

## Background

Syringe access and disposal programs are evidence-based public health programs that aim to protect injection drug using communities and the community at large from the spread of infections, including HIV and viral hepatitis. Evaluation research and experience in the field have both demonstrated that adequate syringe access produces positive individual and community-level health outcomes without creating negative societal impacts.

The call for syringe programs has existed in San Francisco nearly from the beginning of the HIV epidemic. These services began as a grassroots effort to respond to community needs for sterile syringes. The City and County of San Francisco formally sanctioned syringe access in 1993, when Mayor Frank Jordan declared a public health state of emergency, a move that gave him the power to legalize syringe programs, and began funding programs as an essential

structural component of HIV prevention services. Progress and advancements in policies for syringe access are evident in the fact that today, California allows for state funds to be used for costs associated with operating a syringe program. On December, 16, 2009, President Obama signed the Consolidated Appropriations Act of 2010, which provided a historic shift in federal policy to lift the 1989 ban on using federal funds for syringe program. Compared to cities that were not early adopters of syringe access, San Francisco has significantly lower rates of HIV infection among IDUs which has minimized transmission to the general heterosexual and lesbian community.

On October 22, 2008, the HPS released the San Francisco Syringe Access and Disposal Program Policy and Guidelines. The Guidelines were developed in collaboration with community partners and were endorsed by the full HPPC on September 11, 2008. The document outlines broad operational guidelines for syringe programs. It is intended as a framework within which organizations funded by SFDPH are required to develop detailed operational guidelines appropriate to their own setting. The Guidelines summarize best practices based on public health strategies and the HPPC strongly recommends that all organizations, including those not funded by SFDPH, adhere to the principles and protocols provided in this document. The Syringe Access and Disposal Program Policy and Guidelines provide detailed information on mandatory practices required by law or by departmental directive, as well as strongly recommended practices. A copy of the guidelines and supporting materials is available at <http://www.sfhiv.org/syringe.php>.

## Why Focus on Syringe Programs?

Multiple studies, including a comprehensive review of international evidence on syringe programs indicates compelling evidence of effectiveness, safety, and cost-effectiveness of these programs (Holtgrave et al 1998, Lurie et al 1998, Wodak & Cooney 2006).

In San Francisco, evidence strongly supports that the availability of sterile syringes is responsible for minimizing the number of new HIV infections among IDUs; in fact, evidence suggests that sexually transmitted HIV, rather than syringe-transmitted infections, accounts for the majority of new HIV infections among injectors (Kral et al 2001).

San Francisco syringe programs also reduce drug use and injection drug-related harms. Results from a study of a syringe program in San Francisco demonstrated that from December 1986 through June 1992, injection frequency among IDUs in the community decreased from 1.9 injections per day to 0.7, and the percentage of new initiates into injection drug use decreased from 3% to 1% (Watters et al 1994). Moreover, this same study found that the syringe program did not encourage drug use either by increasing drug use among current IDUs or by recruiting significant numbers of new or young IDUs. Additional studies have also found use of syringe programs to be associated with reduced syringe sharing and other injection-related risk reduction behaviors (Bluthenthal et al 1998, Guydish et al 1993, Hagan et al 1991, UC Berkeley School of Public Health undated report). In addition to this, syringe programs promote safe disposal of syringes, and a recent study found that in San Francisco, the majority of syringes were disposed of at syringe program sites (Wenger et al in press).

## Menu of Elements

### REQUIRED ELEMENTS (LISTED IN ORDER OF REQUIRED PROTOCOL)

The following table lists each of the required and supplemental elements for syringe programs. Syringe programs must include each of the required elements, but programs can choose supplemental elements to include in their program design to enhance their services and best meet the needs of their priority population. For example, in addition to all of the required elements, a syringe program may choose to incorporate Health Education and Risk Reduction activities. This, however, is not required in order for the syringe program to remain in operation. In the next section, a detailed description of each element is provided. Please refer to the Guide to Strategies and Interventions (Section VII) for additional information about specific supplemental elements as well as additional strategies and interventions to incorporate when developing programmatic activities.

REQUIRED ELEMENTS	SUPPLEMENTAL ELEMENTS	187
• Community Service Modality	• Additional Community Service Modalities (see p. 188)	
• Sterile Injection Equipment and Disposal Services	• Health Education and Risk Reduction (see pp. 190-191)	
• Safer Sex Supplies	• HIV Status Awareness (see p. 189)	
• Education and Health Promotion	• Prevention with Positives (see p. 189)	
• Referral to Ancillary Services	• Provision of Ancillary Services (see p. 189)	

## Community Service Modality

A community service modality refers to the method by which syringe program services are provided. Options include the following (please note that sites may select more than one option):

- **Fixed site:** Syringe program services are provided from a building.
- **Venue-based:** Syringe program services are provided through use of a vehicle or structure (e.g., table) and typically provided at a specified location at a specified time.
- **Pedestrian services:** Services are provided by staff members who move from place-to-place or group-to-group in an effort to promote and extend the reach of the service. Access to syringes and syringe disposal takes place as part of this broader promotional and educational activity.

The objective of a community service modality is to ensure a broad range of access to community-based syringe programs. Syringe programs may consist of a mix of outlet types and service delivery modes with the aim of providing comprehensive access to sterile supplies for people in the community. In assessing the level of coverage in the community, programs should be regarded as complementary components of the syringe program network.

## Sterile Injection Equipment and Disposal Services

Sterile injection equipment and disposal services refers to injection supplies provided to the community in order to help reduce the transmission of bloodborne pathogens, as well as containers to place used biohazardous injection supplies and the availability to dispose of them in a safe manner. Required supplies include a range of syringes and gauges, syringes, injection supplies (e.g., cookers, water, and cotton balls), biohazard containers, and onsite disposal services. At a syringe program outlet, all participants who require injection equipment must receive a reasonable supply of sterile equipment and an appropriately-sized biohazard or “sharps” container to meet their needs. If capacity permits, all providers must stock a variety of injection equipment items, including a range of syringe brands and sizes, a range of syringe gauges and sizes, and a range of personal use and other disposal containers. All injection equipment, including an appropriate disposal container, must be made available to participants. Promoting safe disposal of used syringes is a key component of syringe programs. Syringe programs are also required to conduct street sweeps of the areas in which they operate to pick up improperly discarded syringes.

## Safer Sex Supplies

Safer sex supplies refer to materials provided to the community in order to help reduce the transmission of STIs and HIV. Syringe programs are required to provide, at minimum, condoms and water-based lubricant. At a syringe program outlet, all participants must receive a reasonable supply of safer sex supplies to meet their needs. All providers should stock a variety of items, including condom brands and sizes, a range of water-based lubricants, and other safer sex supplies.

## Education and Health Promotion

Education and health promotion refers to resources and brief interventions designed to provide health education to people who inject drugs. This information may be delivered through brochures and/or other written materials, or individual- or group-level fora. The objective of

## SUPPLEMENTAL ELEMENTS (LISTED ALPHABETICALLY)

providing education and health promotion resources and interventions is to increase client knowledge of safer injection strategies and safer sex strategies. Syringe programs must maintain a supply of appropriate written resources designed to provide health education to people who inject drugs. Syringe program staff should also be available to provide health information to individuals or groups. When available, information should be provided in relevant languages.

### Referral to Ancillary Services

Syringe programs must provide referrals to appropriate health and community services. Programs that are not co-located with other services must develop relationships with other providers and maintain an updated list of referrals that address clients' needs. Options for types of referrals include the following:

- Behavioral health services;
- Case management (see PCM, p. 245);
- Counseling services (see IRRC, p. 182);
- HIV prevention services (HIV status awareness (pp. 177-184), health education (pp. 190-191), prevention with positives (p. 192-195);
- Medical Care;
- Overdose prevention education;
- STI testing and treatment (see p. 277);
- Viral hepatitis services (see p. 265); and
- Wound-care.

The objective of client referrals is to connect syringe program participants to health and social services to support their health and well-being. Syringe program staff must have knowledge of appropriate services in their area. Agencies must develop referral systems and establish referral pathways and protocols with key services to assist syringe program participants who wish to access additional services.

### Additional Community Service Modalities

Syringe programs may select additional community service modalities to provide syringe access and disposal services. Supplemental options for service modality include the following (please note that syringe programs' sites may select more than one option):

- **Community Events:** Services may also be provided at selected community events with the knowledge and support of event organizers. These activities aim to provide a wide range of information, sterile syringes and injection supplies, as well as referral information.
- **Hormone Syringe Access:** Programs that provide access to appropriate equipment and information should be available to people injecting these products to support their safety and the safety of those around them.
- **Satellite Syringe Access:** Individuals who collect used syringes from their peers, dispose of them at syringe programs, and deliver new syringes back to their peers, along with additional prevention materials and information, provide satellite syringe access.

The objective of having additional community service modalities is to ensure a broad range of access to community-based syringe programs. While syringe programs are required to identify their primary modes of community service modalities (e.g., fixed site, venue-based, pedestrian), an organization may select to expand their services modalities in order to broaden their reach to the community. Organizations selecting supplemental community service modalities must follow the standards identified in the San Francisco Syringe Access and Disposal Program Policy and Guidelines.

## Health Education and Risk Reduction

Health Education and Risk Reduction (HERR) refers to activities that are part of larger programs that link individuals to HIV status awareness programs, and create community, structural, and policy change. For more information on HERR, please see pp. 190-191.

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## HIV Status Awareness Programs

HIV status awareness refers to all strategies and services that help people know their HIV status. Syringe program providers are encouraged to develop their own HIV status awareness programs that complements their syringe program services. Access to such services should always be voluntary, and should not interfere with the capacity of the syringe programs to conduct their core activities. Organizations who conduct HIV status awareness services must follow all requirements and laws for HIV testing. Please see pp. 177-184 for details on HIV status awareness.

## Prevention with Positives

Prevention with Positives refers to any intervention that addresses the prevention needs of PLWH. For more information about PWP, please refer to pp. 192-195.

## Provision of Ancillary Services

Syringe program providers are encouraged to co-locate their programs with other ancillary services. Syringe programs may choose to offer a wider range of health-related services to people who inject drugs. Options for ancillary services that may be co-located at a syringe program site include the following:

- Behavioral health services;
- Case management (see PCM, p. 245);
- Counseling services (see IRRC, p. 182);
- HIV prevention services (HIV status awareness (pp. 177-184), health education (pp. 190-191), prevention with positives (pp. 192-195));
- Medical Care;
- Overdose prevention education;
- STI testing and treatment (see p. 277);
- Viral hepatitis services (see p. 265); and
- Wound-care.

Providing these ancillary services aims to offer syringe program clients additional health and social services to support their health and well-being. Access to such services should always be voluntary, and should not interfere with the capacity of the syringe programs to conduct their core activities. In general, provision of these ancillary services is not expected to be funded from core syringe program funds unless there is compelling evidence that syringe-supply and prevention-education demands have been adequately met and there is capacity to provide additional services.

# Health Education and Risk Reduction

## SECTION IV

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### Overall Goal of Health Education and Risk Reduction

- To address drivers and cofactors of HIV and reduce high-risk behaviors to decrease HIV infections.

## Why Health Education and Risk Reduction is a Priority

HERR activities capture the broad array of behavioral interventions for HIV prevention. The diverse HERR interventions are primarily aimed at reducing drivers (for the highest risk populations, BRPs 1-3) and cofactors (for the lower-risk BRPs) of HIV in San Francisco. (Please see Chapter 3: Priority Setting for more information about BRPs). By focusing these behavioral interventions on reducing specific factors (e.g., substance use, STIs, multiple partners) known to be associated with the transmission and acquisition of HIV, the goal is to prevent as many HIV infections as possible in San Francisco.

### Definition

HERR refers to HIV prevention activities related to education and behavioral interventions to reduce HIV infections. HERR activities can be conducted with individuals regardless of their HIV status. Additional activities most relevant to PLWH are described in Section V, pp. 192-195.

### Introduction

This section provides the background and the approach for developing an HIV prevention program incorporating HERR activities. HERR encompasses the HIV prevention activities that are beyond testing and syringe programs, and includes programs that may be appropriate for persons living with HIV. While HIV status awareness programs and syringe programs can also focus on drivers and cofactors, HERR interventions for both HIV-negative and PLWH should be built to address drivers, while meeting the needs of the population and considering the contextual factors that often place the individual and community at risk for HIV (for a list of drivers and cofactors, see Chapter 3: Priority Setting, pp. 162-163).

There are a range of HIV prevention activities that fall under the umbrella of HERR, and the specific interventions and strategies that may be employed are described in the Guide to Strategies and Interventions (Section VII). Programs are encouraged to use creative approaches to address the drivers and cofactors of HIV that are relevant to priority populations.

### Background

San Francisco supports a broad range of health education and risk-reduction activities. HERR activities are applicable to individuals who are known to be HIV-infected, HIV-uninfected, or of unknown status. Interventions can be individual-level (e.g., Individual Risk Reduction Counseling, Prevention Case Management), group-level (e.g., Single Session Groups, Multiple Session Workshops), or community-level (e.g., social marketing, community organizing). These interventions aim to influence risk behavior through modifying knowledge, attitudes, beliefs, and self-efficacy. Among the populations at highest risk for HIV, HERR activities should be used to develop models for addressing the drivers of HIV (e.g., methamphetamine treatment programs, programs that aim to reduce STI risk or programs that reduce unsafe sex with multiple partners, or combinations). Providers are additionally encouraged to explore and

address the contextual factors that place individuals at risk for HIV infection in relation to the drivers (for more information on contextual factors, see p. 155).

The HPPC recognizes that HIV prevention activities are often developed by communities and outside of formal health promotion institutions. As a result, the HPPC encourages providers to explore and determine the effectiveness of community-driven programs. For instance, sero-adaptation is a community-created response that individuals have been practicing for a number of years in an attempt to reduce the risk of contracting and/or transmitting HIV. The benefits of seroadaptation remain to be determined. For more information about seroadaptation, please see Chapter 2: Community Assessment, p. 67.

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The Guide to Strategies and Interventions (Section VII of this chapter) lists specific interventions for reducing sexual and/or injection-related risk behaviors, as well as the strategies that support these interventions. Strategies range from peer education to harm reduction to Internet-based approaches. From these listings, providers may select an intervention or a set of interventions and strategies to conduct with their priority population.

To maximize their effectiveness, these strategies and interventions should not function in isolation; they should be used in combination, if appropriate. Providers should determine how best to combine the various health education and risk reduction strategies and interventions to create the most appropriate and effective programs for their clients, based on both scientific evidence and their experience.

## Why Focus on HERR?

Addressing drivers and cofactors of HIV through behavioral interventions is a critical component of San Francisco's 2010 approach to HIV prevention. Because drivers are associated with the greatest number of new HIV infections in San Francisco, intervening on these factors is likely to reduce HIV transmission and acquisition in the city. As such, HERR activities should focus on high-risk populations and the drivers that affect these individuals. For more information on high-risk populations, please see Chapter 3: Priority Setting, p. 156.

Evidence indicates that HERR activities are effective in reducing high risk behaviors associated with HIV. Findings suggest that behavioral interventions reduce unprotected anal sex among MSM (Herbst et al 2007, Johnson et al 2008, Lyles et al 2007). Research further indicates that behavioral interventions increase condom use, reduce number of sexual partners, reduce drug use, as well as reduce newly acquired STIs (Herbst et al 2007, Lyles et al 2007). Moreover, substance users in treatment and harm-reduction interventions have also been shown to reduce high-risk behaviors, indicating that such modalities are valuable HERR programs (Shoptaw et al 1998, Shoptaw et al 2005, Woody et al 2003). Overall, HERR interventions are diverse and include individual counseling, social and behavioral support (e.g., peer education, assertiveness and relationship support), in addition to group counseling or workshops, interventions in community areas, training of community leaders, and community-building empowerment activities.

### Overall Goals of Prevention with Positives

- To reduce the spread of HIV and other STIs.
- To suppress viral load in order to promote positive health outcomes and reduce the opportunities of HIV infection.
- To help people living with HIV achieve and maintain physical, emotional, mental, sexual and reproductive health, economic stability and well-being.

### Why Prevention with Positives is a Priority

The HPPC maintains a commitment to support people living with HIV/AIDS (PLWHA) to maintain their health and quality of life through ensuring that they are connected to medical care and support services. When these services are utilized, they can help suppress viral load which contributes to health and well-being. This reduces the chance of transmitting HIV. In addition to this, being connected to medical and support services offers the opportunity to address factors that may contribute to HIV transmission, such as substance use and STIs. Consistent with the previous section on HERR, interventions with PWP should focus on PLWHA affected by drivers to ensure that programs are reaching the persons most at risk for transmitting HIV.

### Definition

PWP is defined as any strategy or intervention that addresses the specific prevention needs of people who know they are persons living with HIV. PLWHA should be involved in the planning and implementation of all PWP programs. This definition was developed jointly by the HPPC and the HIV Health Services Planning Council in 2003. The HPPC acknowledges that there may be different terms for PWP, including "positive prevention" and "HIV status-specific programs." For the purpose of this chapter, we are referring to these interventions and strategies as PWP.

### Introduction

Although many of the HIV HERR interventions can be conducted with individuals regardless of their status, this section aims to highlight and describe those activities that are particularly valuable to PLWHA. Prevention with positives interventions focus on the needs of PLWHA, as well as activities that support health and wellness, with the goal of eliminating transmission of HIV.

### Background

Since 2003, San Francisco has been committed to ensuring prevention efforts have a focus on PLWHA. These efforts are a critical component of San Francisco's overall prevention strategy. The HPPC and the HIV Health Services Planning Council have worked together to draw attention to and develop goals for PWP.

In 2004 and 2005, joint committees comprised of Council members from both the HPPC and the HIV Health Services Planning Council worked to develop and articulate guiding principles and recommendations for PWP services in San Francisco. The resulting product of the committees' work is the document "Thinking Big: Strategies for Delivering Prevention with Positives Programs in San Francisco," available online at <http://www.sfhiv.org/files/committees/2005/PWP/Thinking%20Big%20-%20Final%20report%20October%202005.doc>

More recently, in 2008, a workgroup of providers, community members and consumers from diverse agencies and backgrounds in San Francisco came together to develop a "Best Practice Guide for Prevention with Positives." The Best Practice Guide was developed to serve as a "toolkit" of resources and guidelines for providers working with PLWHA to ensure that provid-

ers have the tools to effectively integrate prevention into services for PLWHA. A copy of the Guide is available at SFDPH HIV Prevention Section.

The 2010 approach to prevention with positives builds on the work and forward progress made in San Francisco since the 2004 Plan, and does not stand in isolation. For further information about PWP, please refer to the documents listed above.

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## Why Focus on Prevention with Positives?

While prevention strategies can be carried out with individuals regardless of their HIV status, the HPPC recognizes that PLWHA have particular prevention needs related to disclosure, stigma, medication adherence, safer sex and safer injecting. PLWHA should be a priority, and this section is dedicated to addressing the unique needs of these individuals.

HIV prevention with PLWHA is particularly important, given that HIV-related stigma remains pervasive. PWP interventions provide the opportunity to address issues related to stigma and the individual's decisions to disclose his/her status and enter into care and receive HIV treatment.

Some research studies of PWP (e.g., INSPIRE, SUMIT) have found no significant effect on use of medical care and adherence to HIV treatment (Purcell et al 2007) or decreasing high-risk behaviors (Wolitski et al 2004) among PLWH. Other studies of prevention with positives interventions have demonstrated effectiveness at increasing harm reduction and health promotion behaviors (Margolin et al 2003) and reducing risk behaviors (Grimstead et al 2001, Rotheram-Borus et al 2001). A recent meta-analysis concluded that interventions for people living with HIV significantly reduced unprotected sex and acquisition of STIs (Crepaz et al 2006). Further studies support the efficacy of Prevention Case Management (PCM), an intervention commonly used with PLWHA (see section on PCM, p. 246).

### CENTRAL ACTIVITIES FOR PREVENTION WITH POSITIVES PROGRAMS

LISTED ALPHABETICALLY

PWP practices should be validating, empowering, sex positive and efficacy-enhancing for PLWHA. People living with HIV should be involved in the planning and implementation of PWP programs and should be included in a way that is respectful of their skills and experiences and is not tokenizing. Just as with any HIV prevention program, services should be linguistically and culturally competent and client-centered. Moreover, HIV prevention programs for PLWHA should be coordinated with other programs and providers serving this population, including mental health, substance use, and housing.

Many HIV prevention interventions are similar when working with high risk individuals, regardless of their HIV status. The HPPC has identified the following activities that are particularly valuable to conducting HIV prevention with PLWHA. These activities support the overall health and wellness of people living with HIV and support reducing HIV transmission.

#### CENTRAL ACTIVITIES (LISTED ALPHABETICALLY)

- Disclosure and Partner Services
- Engagement in HIV Care
- Linkage to Ancillary Services
- STI, Viral Hepatitis, and TB Screening and Treatment
- Treatment Adherence

### Disclosure and Partner Services

The HPPC recognizes the importance of addressing disclosure support in HIV prevention programs for people living with HIV/AIDS. Disclosure in this context goes beyond the initial disclosure and partner services of HIV status awareness and should be ongoing. For people living with HIV, disclosure assistance should offer coaching and support for disclosure in a variety of life situations (e.g., family, friends, workplace, etc.). In addition, disclosure of HIV status may help to address the issue of stigma related to having HIV. HIV disclosure and partner services include the following components:

- Help individuals make informed decisions about disclosing their HIV status.
- Introduce partner notification options, including self-disclosure and referral, dual-disclosure and referral, partner elicitation, partner notification, and internet partner notification (INP).
- Help individuals learn to negotiate safer sex whether or not they choose to disclose their status to their partner(s).
- Provide support and/or referrals to address issues surrounding stigma, shame and fear of disclosure, including fear of violence.

Additionally, as a part of disclosure services, providers may also consider including education about community-driven prevention strategies such as seroadaptation. The HPPC encourages PWP programs to discuss the potential risks and benefits of seroadaptation as a prevention strategy with clients and integrate discussions regarding risk for STIs and viral hepatitis.

For more information on disclosure and partner services, please see p. 193.

## Engagement in HIV Care

Engagement in HIV care requires that providers go beyond the initial process of linking individuals who are HIV infected to care by ensuring that they are fully involved in the process of finding and maintaining HIV primary medical care. This strategy involves the use of multiple interventions that address issues such as health literacy, readiness, health status perceptions, fear, stigma, missed appointments, and substance use and mental health issues. Agencies addressing engagement in HIV care should not only ensure that clients are successfully linked to HIV care, but should also support clients with resources and knowledge about the care system and how to use it. In addition, agencies should monitor client appointments and address ongoing attendance issues and collaborate with medical providers to increase the client's engagement in care and appropriate ancillary services.

For more information on engagement in HIV care, please see p. 220.

## Linkage to Ancillary Services

HIV prevention programs with PLWHA should also include methods to ensure that clients are linked to appropriate support services in order to facilitate a seamless continuum of care. Providers should be knowledgeable about appropriate community resources to which they may refer individuals who need further assistance (e.g., health and social services, mental health, substance use, etc.).

For more information about linkage, please see p. 242.

## Sexually Transmitted Infections (STIs), Viral Hepatitis, and Tuberculosis (TB) Screening and Treatment

There is substantial biological evidence that the presence of STIs increases the likelihood of both transmitting and acquiring HIV. Additionally, viral hepatitis screening and treatment is important as co-infection with viral hepatitis may increase risk for adverse health outcomes for PLWHA (CDC 2008b). Due to the link between HIV, STI, and viral hepatitis transmission/susceptibility, the HPPC recommends that all people living with HIV receive comprehensive STI and viral hepatitis screening and appropriate treatment.

TB is a disease that is spread from person to person through the air. This disease is particularly dangerous for persons infected with HIV because coinfection with HIV and TB can result in possible complications from interactions between the drugs used to treat HIV and the drugs used to treat TB. This high level of risk underscores the need for TB screening and preventive treatment programs for people with HIV and those at greatest risk for HIV infection. The CDC recommends that individuals infected with HIV should be tested for TB. In addition to this, individuals infected with TB should complete preventive therapy as soon as possible to prevent progression to TB disease (CDC 2008a). The HPPC further encourages screening and treatment for sexual partners of PLWHA.

Please see pp. 260-261 for further information on STIs, p. 265 for viral hepatitis, and pp. 262-264 for TB.

## Treatment Adherence

Ongoing access to HIV care and treatment should be an integral component of PWP programs. The HPPC supports ensuring that PLWH have access to antiretroviral therapy and remain engaged in care. Treatment adherence assistance is complimentary with engagement in HIV care. Effective HIV treatment aggressively suppresses viral replication and progression of HIV disease. From a biological perspective, data show that when viral load is decreased, individuals are likely to be less infectious to others, although it is important to note that persons with very low viral loads may still transmit HIV (Attia et al 2008, Quinn et al 2000). Socially, treatment can help people feel healthy enough to be sexually active. Increased health and interest in establishing relationships creates an opportunity for interventions to address safer sex behavior. PLWHA should be linked with risk-reduction education to make informed decisions regarding their sexual behavior. Greater access to treatment may provide the opportunity to engage PLWHA in care and treatment and also allow providers to deliver and reinforce HIV prevention messages and interventions. Providers of PWP services should be knowledgeable about factors that may make it difficult for an individual to adhere to an HIV treatment regimen and work with PLWHA to develop strategies to improve adherence. For more information on treatment adherence, please see p. 236.

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## SECTION VI Structural Change

### Goal of Structural Change

- To address the larger social and environmental factors and systems that can support the reduction of HIV acquisition and transmission.

### Why Structural Change is a Priority

San Francisco recognizes that policies and the broader environment have a significant influence on the transmission and acquisition of HIV. Structural changes ultimately address the context and environment that place individuals at risk for HIV. In contrast to individual- and community-level interventions, structural changes target the structures and systems in the environment and aim to change resource availability, the physical environment, organizational systems, as well as laws and policies that influence on HIV risk.

### Definition

Structural changes are new or modified programs, practices or policies that are logically linkable to HIV transmission and acquisition, and can be sustained over time, even when key actors are no longer involved. This definition was approved by the HPPC in 2006.

Structural changes are different from structural interventions, which represent the specific actions that are taken to realize the change. For more information about structural interventions, please see Section VII, p. 269.

### Introduction

This section provides the HPPC's definition of structural change and the philosophy behind San Francisco's support for system-level changes. Examples of potential structural changes that relate to each of the HIV prevention focus areas are also presented. These examples are intended to provide readers with an understanding of structural changes and how they could be implemented, but this is in no way a comprehensive list and should not be viewed as such.

For further information about how to implement structural changes, please see the structural interventions section in Section VII: Guide to Strategies and Interventions (p. 269).

## Background

Structural changes aim to address the social, political, and economic systems that affect HIV risk. The HPPC supports structural changes that are in line with community values and recognizes the importance of addressing these systems, as these changes are ultimately those that will make it easier for people to remain healthy in their communities. Providers and community experts are called on to explore ways to influence policies that hinder or support HIV prevention activities. In addition, agencies and providers are encouraged to consider creative ways to approach structural changes.

While most HIV prevention interventions aim at modifying individual behavior, structural changes target the larger contextual elements that may result in more effective and sustainable outcomes. Structural changes work to modify the structural elements such as programs, practices, and policies that place certain communities at an increased risk of HIV infection. The HPPC recognizes that structural changes take time and require adjustments to the way that HIV prevention is approached, but also acknowledges the value in long-term sustainability and the ability to affect large numbers of people through implementation of the structural change.

For example, it is important to address the issue of HIV-related stigma. This stigma is a significant public health issue, as it may create obstacles to obtaining and accessing appropriate information and services related to HIV. At the individual level, accurate knowledge about HIV prevention and transmission may help to reduce stigma. However, stigma does not exist only in an individual context but is often entrenched within broader social and cultural environments. As a result, tackling the issue of stigma related to HIV will require creative approaches across various levels of intervention, with a focus on structural level changes.

## Why Focus on Structural Changes?

Structural changes have the potential to reach a broader population, to influence social norms, and to serve as a cost-effective HIV prevention method. A recent study found that HIV prevention structural changes were cost-effective compared to average lifetime treatment costs of HIV (Cohen et al 2006). Some examples of structural changes specific to HIV that have been implemented include syringe programs, closure of bathhouses, and changes in HIV testing laws and policies, including offering HIV tests to all pregnant women and requiring health insurance plans to cover routine HIV testing in California.

Structural changes include, but are not limited to, HIV prevention efforts. Examples of other structural changes that have been implemented include smoking bans and seat belt use laws. Smoking restrictions in workplaces have been found to be associated with higher quit ratios among employees in smoke-free institutions compared to those in non-smoke free (Longo et al 1996). Furthermore, research indicates that mandatory seat belt laws reduce traffic fatalities and serious injuries (Carpenter & Stehr 2007).

Locally, another example of a structural change is the Healthy San Francisco (HSF) program which provides access to health care services for all uninsured residents regardless of immigration status, employment status, or pre-existing medical conditions. By ensuring a usual source of care (i.e., primary medical care home) it is expected that HSF participants will have fewer emergency department and urgent care visits. Each of these examples demonstrates that changing structural factors have the potential to promote health and prevent disease on a broad scale.

## Potential Examples of Structural Changes

In order to affect broader systems to promote HIV prevention in San Francisco, examples of possible structural changes are listed below. These structural changes have been identified as logically linkable to HIV and are sustainable over time. The examples presented do not represent a comprehensive list of structural changes; rather, these are intended to serve as a starting point for providers, agencies, and the SFPDPH to develop structural changes.

The following are examples of potential structural changes that correspond to the highlighted strategies for HIV prevention.

FOCUS AREA	EXAMPLES OF POTENTIAL STRUCTURAL CHANGES
HIV STATUS AWARENESS	<ul style="list-style-type: none"><li>• Ensure that HIV and STI screening and referral is a standard of care in medical settings.</li><li>• Ensure that all individuals testing for HIV, especially those who learn they are HIV infected, are offered partner services and disclosure assistance.</li></ul>
SYRINGE ACCESS AND DISPOSAL PROGRAMS	<ul style="list-style-type: none"><li>• Provide universal access to drug treatment.</li><li>• Eliminate drug paraphernalia laws in California.</li><li>• Establish a legal safer injection facility.</li></ul>
HEALTH EDUCATION AND RISK REDUCTION	<ul style="list-style-type: none"><li>• Enforce laws in San Francisco requiring signage and warning labels in places where poppers are sold.</li><li>• Create a city-wide policy to require access to condoms and lube in sites with liquor licenses in San Francisco.</li><li>• Ensure provision of HIV education and prevention services within the jail system, including trans-specific services.</li></ul>
PREVENTION WITH POSITIVES	<ul style="list-style-type: none"><li>• Ensure universal health care coverage to provide access to health care for PLWHA.</li><li>• Abolish pre-existing conditions as exclusion criteria for obtaining insurance (i.e., health insurance, life insurance, etc.).</li><li>• Repeal the federal ban on travel and immigration for people living with HIV.</li></ul>

Structural changes are also emphasized in the recently-completed work of the African American Action Plan Workgroup. In order to address the factors that contribute to high HIV prevalence among African American MSM in San Francisco, this workgroup proposed the following recommendations for structural changes:

- Ensure provision of treatment and care to all African American MSM living with HIV/AIDS in the Tenderloin neighborhood.
- House all homeless and marginally-housed African American MSM Tenderloin residents living with HIV/AIDS and provide wraparound support services.
- Ensure broader provider resource and staff capacity and cultural competency.
- Ensure HIV testing "on demand" with referrals to care and support for issues related to HIV and other factors (e.g., mental health, substance use, homelessness).

# Guide to Strategies and Interventions

## Tool Boxes

This section of the chapter offers three “tool boxes” to assist providers with designing and implementing HIV prevention programs described throughout Chapter 4: Strategies and Interventions. The “tool boxes” are as follows:

- 1. Behavioral Theories,**
- 2. Strategies and Interventions, and**
- 3. Structural Interventions.**

It also provides two appendices that are designed to supplement the information provided by the tool boxes:

- 1. Appendix 1 titled “Summary of California Laws and Regulations for HIV Testing”** provides an overview of the provisions of the California Health and Safety Code that deal with HIV testing and related subjects, such as reporting to local and state authorities, disclosure, partner notification, STIs; and
- 2. Appendix 2 titled “New Prevention Approaches in Development”** provides an overview of biomedical developments in HIV prevention in fields ranging from vaccine development and microbicides to pre- and post-exposure prophylaxis.

Providers are invited to use the tool boxes to meet the larger goal of establishing integrated, coordinated, and responsive HIV prevention programs for San Francisco’s priority populations. They are encouraged to use interventions that address the areas prioritized by the HPPC: HIV status awareness, syringe programs, addressing drivers of HIV through HERR programs, PWP, and structural change. Throughout this chapter, requirements are indicated that may be associated with specific tools (e.g., under many of the strategies and interventions, tools and guidance for implementation are listed). Other information is offered as guidance to programs and can be applied if it is relevant.

In considering what prevention interventions to implement, it is important to have an evidence-based perspective; that is, how strong is the evidence that the intervention “will work to detect or reduce new HIV infections in your particular context?” Ideally, the interventions chosen have been proven to reduce HIV infections; many studies have examined whether interventions reduce risk behavior or the acquisition of STIs other than HIV. Historically, the strongest evidence for an intervention’s effectiveness is proving that it reduces infections or risk behavior through a randomized controlled trial. Of course, there are many other factors to consider in implementing an intervention, including community experience, the need for and acceptability of the intervention in specific populations, its cost and sustainability, and the capacity to evaluate its effectiveness.

In one example of how to rank interventions by evidence, the CDC uses a “Tiers of Evidence” approach to categorize interventions: using various criteria, interventions are ranked in tiers according to how rigorously they have been evaluated. “Evidence-based interventions” are in the top tier, followed by “theory-based interventions” that do not have sufficient empirical evidence to meet the evidence-based criteria, followed by “under-evaluated interventions.” For more information on this approach, go to <http://www.cdc.gov/hiv/topics/research/prs/tiers-of-evidence.htm>.

The information presented in this guide attempts to summarize key points related to a strategy or intervention. Further research may be required to obtain more detailed information (references are provided where applicable). This section does not provide guidance on the content or curricula for interventions. The types of prevention information, messages, and mode of delivery should be dictated by the evidence supporting their effectiveness and the current prevention needs of the priority population as identified by a needs assessment (see Chapter 2: Community Assessment for needs assessments with various populations, pp. 62-124) or other scientifically sound methods. Curricula can also be borrowed and adapted from other programs with demonstrated relevance and effectiveness.

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This section presents four components involved in designing a sound HIV prevention program. They are:

- **Behavioral theories:** Used in HIV prevention because they help describe what factors or relationships are determinants of individual or group behavior. Evidence shows that particular theory-based HIV prevention programs can be effective in reducing the spread of HIV. Understanding theories and their role in predicting behaviors can help providers frame the strategies and interventions used in prevention programs. By basing program design on theory, programs can have evidence-based support even if they have not been evaluated.
- **Strategies:** Prevention approaches that can be applied across a spectrum of possible interventions.
- **Interventions:** The type of prevention service or modality a program provides.
- **Structural interventions:** Structural interventions for HIV prevention are actions that modify the social, economic, and political structures and systems in which we live. These interventions may affect technology, legislation, media, healthcare, and the marketplace. Rather than attempting to change individual behaviors, structural interventions aim to alter the physical environments in which we live, work, play, and/or take risks to help reduce HIV transmission. Structural interventions also include methods to reduce or abolish income inequality, racism, bigotry, phobias and other inequalities and oppressions which create vulnerability to HIV/AIDS.

## How Can My Organization use This Guide?

This guide aims to support the development of strategies and interventions regardless of the funding source. That is, these tools are intended to assist providers to develop programs seeking resources from a broad range of funders beyond the SFDPH including the CDC, Health Resource Service Administration (HRSA), private foundations, and others. Once an organization is ready to design an HIV prevention program and has a clear understanding of the needs of the population the program will serve (e.g., it has conducted a needs assessment), this guide can be the first resource. There are several ways an organization can begin designing a program, but all programs should include at least one theory, intervention, and strategy. Designing an effective program does not require following the selection of a theory, a strategy and an intervention in the order presented in this section. In fact, many providers begin building their program with information they have about what works for a particular population and design their program from there. For example, an organization might start by selecting a strategy or intervention and then determine the appropriate theory or theories underpinning it. Based on your organization's knowledge of the population it will serve, you can determine which theories, strategies, and interventions fit it best. Exhibit 1 (p. 200) presents the potential theories, strategies, interventions and from which your organization may choose. After the exhibit, there are two examples of how organizations can design HIV prevention programs (pp. 200-201).

## EXHIBIT 1 Menu of Selected Theories, Strategies & Interventions

BEHAVIORAL THEORIES	STRATEGIES	INTERVENTIONS
<ul style="list-style-type: none"> <li>• Diffusion of Innovations</li> <li>• Empowerment Education Theory/ Popular Education</li> <li>• Health Belief Model</li> <li>• Social Cognitive Theory/Social Learning Theory</li> <li>• Social Networks/Social Support/ Peer Support Theories</li> <li>• Stages of Behavior Change Model</li> <li>• Theory of Reasoned Action</li> <li>• AIDS Risk Reduction Model</li> <li>• IMB (Information, Motivation, Behavioral Skills) Model</li> <li>• Stress and Coping Theory</li> </ul>	<ul style="list-style-type: none"> <li>• Addressing Substance Use</li> <li>• Community Organizing</li> <li>• Condom and Lubricant Distribution</li> <li>• Engagement in HIV Care</li> <li>• HIV Prevention in Medical Care Settings</li> <li>• Harm Reduction Options</li> <li>• Opinion Leaders</li> <li>• Partner Services and Disclosure Assistance</li> <li>• Peer Education</li> <li>• Perinatal Transmission Preventions</li> <li>• Technology</li> <li>• Treatment Adherence</li> </ul>	<p><b>INDIVIDUAL LEVEL INTERVENTIONS</b></p> <ul style="list-style-type: none"> <li>• Hotline</li> <li>• Venue Based Individual Outreach</li> <li>• Recruitment and Linkage</li> <li>• Individual Risk Reduction Counseling</li> <li>• Prevention Case Management</li> <li>• Post Exposure Prophylaxis</li> </ul> <p><b>GROUP LEVEL INTERVENTIONS</b></p> <ul style="list-style-type: none"> <li>• Single Session Groups</li> <li>• Multiple Session Workshops</li> </ul> <p><b>COMMUNITY LEVEL INTERVENTIONS</b></p> <ul style="list-style-type: none"> <li>• Social Marketing</li> <li>• Venue-Based Group Outreach</li> </ul> <p><b>INTERVENTIONS FOR DETECTING AND TREATING COMORBIDITIES</b></p> <ul style="list-style-type: none"> <li>• Sexually Transmitted Infections</li> <li>• Tuberculosis</li> <li>• Viral Hepatitis</li> </ul>

### Example #1

#### Developing a Health Education and Risk Reduction (HERR) Intervention

An organization would like to develop an intervention for gay men and other MSM because they are a priority population in San Francisco (pp. 150-168 Priority Setting Chapter). The organization started by reviewing Section I: San Francisco's Approach to HIV Prevention (pp. 173-177) and Section IV: Health Education and Risk Reduction (pp. 190-191). After reviewing the options, the organization identified African American men as the priority population. The organization also determined that multiple drivers should be addressed through the intervention, including having multiple sex partners and heavy alcohol use.

The organization then reviewed the resources within websites provided in the guide (p. 212) and selected d-up!, an intervention that is part of the CDC Diffusion of Effective Behavioral Intervention (DEBI) project. d-up! Defend Yourself! (d-up!) is a community-level program that works with African American MSM to encourage condom use and improve men's self-esteem.

The program managers reviewed the Behavioral Theories section to identify a theoretical framework for the program. After consulting the guide and d up! information, the program manager confirmed that the theories used to develop d-up! are Diffusion of Innovations and Social Networks/Support/Peer Support Theories. Diffusion of Innovations fits with the strategies and interventions selected because it is based on using innovators and early adopters to spread messages regarding HIV prevention, risk reduction, and self-esteem by opinion leaders to their social networks. The Social Networks/Social Support/Peer Support Theories are related to the peer education that will develop between the opinion leader and his peers. This theory is based on the concept that networks of support are useful to changing behavior. In other words, the support offered by peers can help reduce risky behaviors.

The program manager then selected the three Strategies: Opinion Leaders, Peer Education, and Harm Reduction Approaches for the program. These strategies will be used to recruit men who are well respected and trusted by peers in their networks to promote the benefits of consistent condom use and build self-worth among their friends and acquaintances. Through peer education, these opinion leaders will use a harm reduction approach for increasing safer-sex behaviors.

The program manager then reviewed the guide and selected the interventions that were most relevant. Because the program manager will need to recruit the leaders of key social networks (to act as peer educators and opinion leaders), Recruitment and Linkages (R&L) was selected as an appropriate intervention. R&L is also an appropriate intervention for d-up! since the program will need to enroll opinion leaders and engage them in the in-depth prevention messaging and training.

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The program manager will also need to train the leaders using the d-up! curriculum, therefore he selected Multiple Session Workshops (MSW), since the d-up! opinion leaders training is based on a four session training series. Finally, the program manager also selected Venue Based Individual Outreach (VBO), because each opinion leader will set goals to hold risk reduction conversations with at-risk friends and acquaintances in their own social network between weekly sessions.

By applying the evidence-based Behavioral Theories, Strategies and Interventions from the guide, the program manager has selected the appropriate elements to support the implementation of a d-up! model.

## Example #2

### Developing a Community Clinic HIV Status Awareness Program

A local community clinic would like to develop an HIV status awareness program that is grounded in evidence. The clinic staff started by reviewing Section I: San Francisco's Approach to HIV Prevention (pp. 177-189) and Section II: HIV Status Awareness (pp. 177-184). After reviewing these sections, the staff also determined that the program should address the use of drugs and unprotected sex with multiple partners. The staff then reviewed the HIV status awareness "menu" and recognized that the clinic will need to comply with the required elements and may add the supplemental elements of interest. In this case, Prevention Case Management (PCM) for individuals who test HIV-positive and viral hepatitis testing are added given the prevalence of hormone and drug injection among the clinic's population.

Based on the setting where the services will take place, the program's key strategies are HIV prevention in medical care settings and partner services and disclosure assistance. By using this guide, clinic staff can determine that recent studies have shown that clinics serving HIV infected individuals and those at risk for HIV infection often miss opportunities to deliver prevention messages, thus confirming that the medical care setting is an appropriate strategy to use. Also, partner notification has been shown to be effective, yet is underutilized in many settings.

Given that the clinic staff selected the interventions PCM and viral hepatitis, the clinic staff used the guide to review the tools and guidance for implementing PCM and viral hepatitis services. PCM will be used by a case manager in the clinic to meet with patients who are HIV infected to follow-up on medical appointments, as well as work with the clients to provide counseling about disclosure options (see p. 180 for more information on disclosure options) and partner services. The clinician will support the patient to implement the option they choose and will provide any needed assistance. If the patient chooses partner notification, the clinician will work with the local health department that provides partner notification, and will refer those who may have been exposed to HIV to an appropriate testing site.

The clinic staff then reviewed the Behavioral Theories section of the guide to build a theoretical framework for the program. The guide offers behavioral theories that are important in the development of sound HIV status awareness programs. After consulting the guide, the clinic staff selected the theory that is most pertinent to the clinic's program: the Stages of Behavioral Change Model.

The Stages of Behavioral Change Model is most appropriate because it serves as the basis for the counseling provided by the staff. The counseling provided will guide the patient through the contemplation, preparation, action and maintenance that lead to behavioral change. The aim is that through this process the patient will become aware of the implications of his/her status and will learn how to disclose their HIV status to past, current and future partners in order to prevent the transmission of HIV.

# Tool Box #1

## BEHAVIORAL THEORIES

### Introduction

**Behavioral Theory.** A model or framework, developed through multiple observations over time, that depicts and predicts how people behave and that shows how the different factors that influence behavior are linked together.

Behavioral theories are important for HIV prevention because interventions based on sound theoretical models are the most effective at encouraging behavior change (Valdiserri et al 1992).

There are many formal theories which have been tested with many different populations. This guide presents current practices based on formal theories that are published in the HIV prevention literature (see Exhibits 2-10).

The HPPC recognizes that further research may be in development or has not been published. Readers are encouraged to do additional research to supplement this guide. For example, the Implicit Theory Project of the University of California, San Francisco, Center for AIDS Prevention Studies (UCSF CAPS) (Freedman et al 2006) explored the informal theories that HIV prevention providers use as the foundation for their programs. The researchers interviewed several Bay Area providers about (1) what promotes risk behavior among their clients; and (2) how they think behavior change happens. The interviews revealed a diversity of theories underlying various programs, but three themes emerged across programs regarding their understanding of how to change clients' risk behavior:

- **Context.** HIV prevention is usually not people's primary concern. Structural issues, such as racism, homophobia, poverty, and violence often have a greater impact on people's daily lives, so HIV prevention must be integrated into a process in which these larger concerns are addressed (although there are limitations to the extent to which providers are actually able to address these issues).
- **Community.** Building a sense of community and connectedness to others is an essential component of HIV prevention, because it contributes to building self-esteem, which, in turn, helps people to engage in risk-reduction practices.
- **Change.** Once the larger contextual issues have been addressed and a sense of community has been created, providers are able to focus directly on supporting people to reduce their HIV risk behaviors.

These findings reflect San Francisco's approach to HIV prevention — one in which addressing structural issues, maintaining community-driven programs, and focusing on behavior change are three central components. Providers are encouraged to develop programs based on either formal theories or implicit theories that they know work for their priority populations based on their experience.

COMPONENTS	HIV PREVENTION EXAMPLES
<b>DIFFUSION:</b> <i>"The process by which an innovation is communicated through certain channels over time among the members of a social system."</i>	Outreach or social marketing efforts help get the word out about new developments in HIV prevention, such as new condoms on the market or a new HIV testing site.
This can refer to information about how to prevent HIV, or information about available HIV prevention programs or services. When people participate in HIV prevention activities, they tell others about the activity, as well as what they learned.	
<b>INNOVATION:</b> <i>"An idea, practice, or object that is perceived as new by an individual."</i>	In HIV prevention, this could be a new program or service, new prevention materials (such as new types of condoms or testing technology available), or a new harm reduction approach to prevention that an agency is trying to promote.
<b>INNOVATORS, EARLY ADOPTERS, EARLY MAJORITY ADOPTERS, LATE MAJORITY ADOPTERS, AND LAGGARDS:</b> The five categories of "adopters" according to how long it takes them to accept a new idea or implement a new behavior.	Whatever the HIV prevention idea, practice, or object that is being promoted, it reaches different people in different ways and at different rates. This ranges from innovators (those who take on the new practice or idea right away) to laggards (who never take on the new practice or idea).
<b>FACTORS THAT INFLUENCE THE SPEED AND EXTENT OF DIFFUSION:</b> Whether the innovation is better than the behavior or condition it will replace, if any; whether it fits with the priority audience's existing values, experiences, and needs; and how great a commitment it takes to adopt the innovation.	To successfully promote an HIV prevention idea, practice, or object, it must be promoted in a way that is appropriate for the population an agency is trying to reach. In effect, the innovation must be "marketed" or "spun" however will make it easiest for the population to accept it.

EXHIBIT 3 Empowerment Education Theory/Popular Education  
(Freire 1970, Horton 1990)

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COMPONENTS	HIV-PREVENTION EXAMPLES
<b>POPULAR EDUCATION:</b> Interventions based on this theory, developed by Brazilian educator Paulo Freire, use a "problem-posing" and participatory methodology of education with a group of individuals from the priority community.	Giving people the chance to participate in a collective effort to address the drivers and/or cofactors that affect HIV risk (e.g., drug use, unprotected sex with multiple sex partners, incarceration) can influence both individuals and communities. In HIV prevention, this method could be used in group interventions (e.g., single session groups [SSGs], multiple session workshops [MSWs]) that focus on addressing a specific issue or range of issues related to HIV prevention that the group defines for itself.
<b>DIALOGUE:</b> In the dialogue process, everyone participates as "co-learners." People discuss and share their experiences in a group.	In SSGs or MSWs, an HIV prevention agency could facilitate a dialogue among participants about their life experiences and how they have affected their risk for HIV.
<b>CRITICAL CONSCIOUSNESS:</b> Dialogue eventually leads to a process of critical reflection in which people begin to see and understand the social context of their personal problems and behaviors.	Through such a discussion, participants might notice common themes and social structures that contribute to HIV risk in their community. For some groups, a theme might be how drug use relates to unsafe sex. For others, a theme might be depression or mental health. Identifying the themes helps the group understand the "bigger picture" of HIV and the multiple issues that play into HIV risk.
<b>PRAXIS:</b> The ultimate goal is praxis, which is the continual interplay of discussion, critical thinking, problem solving, and action to promote individual and community change.	Ongoing discussions like these can lead people to internalize what they have learned and begin to develop a sense of power in their own lives and their communities. Over time, this process might lead to community organizing (see p. 216) or changes in risk behaviors at the community level.

COMPONENTS	HIV PREVENTION EXAMPLES
<b>PERCEIVED SUSCEPTIBILITY:</b> People are motivated to change behavior when they believe that they are susceptible to the disease.	Someone who sees first-hand the effects of HIV on their social circle or community might have a high perceived susceptibility because HIV is "close to home." Someone who does not know anyone with HIV and who does not engage in high-risk behaviors might have a low perceived susceptibility.
<b>PERCEIVED SEVERITY:</b> People are motivated to change behavior when they believe that the disease generally has serious consequences.	Someone who perceives HIV to be a "manageable chronic illness" might have a lower level of perceived severity compared with someone who views HIV as a "fatal disease."
<b>PERCEIVED BENEFITS:</b> People are motivated to change behavior when they believe that changing the behavior will reduce their risk. They are also able to maintain behavior change over time.	People might be more willing to change their sexual or syringe-sharing behaviors if they believe that it will help them. A belief that condoms protect against HIV could lead to high motivation to use them, while a belief that condoms do not protect against HIV might lead to low motivation to use them.
<b>PERCEIVED BARRIERS:</b> People are not motivated to change if they believe their current behavior has few or no negative consequences (e.g., expensive, dangerous, unpleasant, inconvenient).	A belief that condoms reduce sensation during sex is a perceived barrier to condom use.
<b>CUE TO ACTION:</b> A specific stimulus, such as a prevention intervention, is often required to trigger behavior change.	Participating in an HIV prevention program might be just what a person needs to start a process of behavior change. Interventions such as outreach, individual counseling, or group sessions can act as the "cues to action" and give people the tools and support they need to change their behavior.

COMPONENTS	HIV PREVENTION EXAMPLES
<b>ENVIRONMENT:</b> Factors external to the person may influence behavior.	Social, economic, political, and a variety of other factors can affect a person's ability to engage in behaviors that may prevent HIV. Examples are drivers and cofactors such as poverty, limited access to services, policies that prevent people from receiving treatment on demand for drugs, mental-health issues, and a host of others.
<b>SITUATION:</b> A person's perception of his or her environment influences behavior.	The amount of control someone feels over his or her life situation could influence how he or she approaches HIV risk reduction and whether he or she will engage in safer behaviors.
<b>BEHAVIORAL CAPABILITY:</b> A person's knowledge and skills to perform a behavior influence whether a person engages in that behavior.	The more knowledgeable one is regarding a prevention strategy or the more practice he or she has had, the more effective he or she will be at that behavior. For example, knowing that condoms help protect against HIV, knowing how to put them on, and having the skills to discuss condom use with a partner all represent behavioral capability.
<b>OUTCOME EXPECTATIONS/EXPECTANCIES:</b> A person expects certain results from engaging in a particular behavior and places a certain value on the results, and these factors affect that person's behavior.	If a person living with HIV believes that using condoms during sex will protect their partner from getting HIV, and it is very important to the person to protect his or her partner, he or she will be more likely to use condoms.
<b>SELF-EFFICACY:</b> A person's confidence in performing a behavior affects whether the person will engage in that behavior.	The more a person feels capable of engaging in a behavior, the better he or she will be at it and the more likely he or she will be able to do it — whether it relates to negotiating condom use, being able to keep sterile syringes for injection on hand, or any other behavior.
<b>OBSERVATIONAL LEARNING:</b> A person acquires new behaviors from watching the actions of others and observing the results.	Using condom demonstrations in a group setting and discussing different ways participants have introduced condom negotiations with their sex partners.
<b>RECIPROCAL DETERMINISM:</b> The interaction of the person, the behavior, and the environment in which the behavior is performed affects the person's behavior.	This overarching theme highlights how the environment can affect behavior and how behavior can affect the environment. A person who uses only sterile syringes to inject drugs can support friends in adopting the same practice. This, in turn, creates a social circle that is supportive of safer injection behaviors, which continues to motivate individuals in that circle and possibly in other circles to maintain this practice.

## COMPONENTS

## HIV PREVENTION EXAMPLES

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**SOCIAL NETWORKS:**

"Social networks" refer to the density, complexity, size, and other characteristics of a social group and are related to health and well-being.

How social networks are formed and how people relate to each other within those networks can influence individual behavior, ranging from drug and alcohol use, to sexual practices, to injection practices.

**SOCIAL SUPPORT:**

"Social support" refers to the positive emotional and practical products that people derive from their social networks and is related to health and well-being.

For someone trying to stop using drugs or alcohol or reduce their use, because he or she notices that it has negative effects on his or her health, support and encouragement from family and friends can be very helpful.

**PEER SUPPORT:**

"Peer support" refers to the social support received from peers (people with whom a person identifies because of similar age, race/ethnicity, culture, or other aspects of identity) and is related to health and well-being.

Someone trying to reduce or quit using alcohol or drugs would have a harder time if all of their friends and peers use. However, someone with friends who do not use and/or social situations in which alcohol and drugs are not present might be better able to reduce or stop using.

## EXHIBIT 7 Stages of Behavior Change Model (Prochaska et al. 1997)

COMPONENTS	HIV PREVENTION EXAMPLE
<b>PRECONTEMPLATION:</b>	Someone who has never used condoms and has not thought about starting to use them is in the precontemplation stage.
<b>CONTEMPLATION:</b>	A person who has thought about starting to use condoms, but has not done it yet is in the contemplation stage. The person might have been prompted to think about condom use because of something that happened in their life, such as having a friend disclose his or her HIV-positive status.
<b>PREPARATION:</b>	Someone in this stage might purchase or find out where to get condoms or begin to discuss condom use with partners.
<b>ACTION:</b>	Someone in the action stage has started to use condoms during sex at least some of the time.
<b>MAINTENANCE:</b>	In the maintenance stage, a person has incorporated condom use and discussions about condom use into their sexual encounters and this has gone on for some time.
<b>RELAPSE:</b>	Someone made a commitment to the lifestyle of using condoms consistently and had a one night stand without a condom because the partner preferred it. This person has relapsed.

## EXHIBIT 8 Theory of Reasoned Action

### COMPONENTS HIV PREVENTION EXAMPLE

**BEHAVIORAL INTENTION:**

Whether a person intends to perform a behavior is the most important predictor of actual behavior.

**HIV PREVENTION EXAMPLE**

Someone who actually plans ahead of time not to use drugs or alcohol during sex is more likely to succeed than someone who does not intend to abstain or has not made plans.

**ATTITUDE:**

A person's beliefs and values about the behavior determine his or her attitude about the behavior, and attitude affects behavioral intention.

Someone who thinks using drugs or alcohol during sex is fun and exciting will have different behavioral intentions than someone who feels nervous about this behavior because it might lead to unsafe sex.

**SUBJECTIVE NORM:**

A person's perception of whether important individuals (e.g., peers) approve or disapprove of the behavior and whether he or she is motivated to act according to those people's opinions determine his or her subjective norm, and subjective norm affects behavioral intention.

If friends think using drugs or alcohol during sex is fun, a person may be likely to believe that he or she should do the same.

## EXHIBIT 9 AIDS Risk Reduction Model

### COMPONENTS HIV PREVENTION EXAMPLE

**LABELING:**

A person must consciously identify a sexual behavior as high risk for contracting HIV before they will consider any change.

**HIV PREVENTION EXAMPLE**

The more someone feels that anal sex can put them at risk for contracting HIV, the more likely they are to consider changing that behavior.

**COMMITMENT:**

A person must commit to reducing high-risk sexual behavior and/or increasing low-risk sexual behavior to make that change.

A person must make a commitment or agreement to not having anal sex as often, or increasing condom use when they have anal sex, in order for the behavior change to occur.

**ENACTMENT:**

Seeking and enacting strategies to achieve the behavior change goals constitute enactment.

If this person purchased condoms or sought out partners willing to engage in other types of sex besides anal sex, this would constitute enactment.

## EXHIBIT 10 IMB (Information, Motivation, Behavioral Skills) Model

(Fisher &amp; Fisher 1992)

## COMPONENTS

## HIV PREVENTION EXAMPLE

**INFORMATION:**

People need information regarding HIV transmission and prevention in order to reduce their risk for HIV.

People need to know that HIV can be transmitted through sexual or blood-to-blood contact and that condom use and the use of sterile injection equipment can prevent transmission.

**MOTIVATION:**

How motivated a person is to change HIV risk behaviors affects whether he or she acts on the information he or she receives.

Someone who wants to start practicing safer sex is more likely to be able to translate the idea that condoms can protect against HIV into actual behavior.

**BEHAVIORAL SKILLS:**

The necessary skills to perform the behavior must be present, along with information and motivation, for behavior change to occur.

Having information and being motivated to change behavior is not enough to result in behavior change unless a person knows how to talk to partners about condom use, how to correctly put on and take off a condom, etc.

# Tool Box #2

## STRATEGIES AND INTERVENTIONS

### Introduction

There are numerous types of strategies and interventions relevant to HIV prevention, and new ones are constantly being developed. The main strategies and interventions used in San Francisco and other urban settings are described in this tool box.

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**Strategy.** A prevention approach that can be applied across a spectrum of possible interventions (e.g., peer education). HIV prevention providers may decide whether to select one strategy or multiple strategies for delivering interventions.

**Intervention.** The type of service or prevention modality a program provides (e.g., recruitment and linkage, multiple session workshops). All HIV prevention programs must include an intervention or set of interventions.

The strategies and interventions in this tool box are organized as follows:

- 1. Strategies that Support Interventions**
- 2. Interventions:**
  - B. Individual-Level**
  - C. Group-Level**
  - D. Community-Level**
  - E. Interventions for Detecting and Treating Comorbidities**

Although the most obvious priority audiences for the HIV prevention strategies and interventions described here are the populations at risk, providers may also consider developing programs for individuals or groups who serve populations at risk, such as health care providers and other non-HIV prevention service providers. Such programs may include cultural competency training, training on federal, state, or local standards and guidelines (e.g., for HIV status awareness), or training on how to educate and counsel patients about HIV-related issues (e.g., HIV training for medical providers).

Organizations should be mindful that there is a mix of strategies and interventions citywide that complement each other, that they are not duplicative, and that they are regionally coordinated. For example, having five distinct late-night outreach programs for MSM who inject drugs in the Tenderloin may not be necessary. However, if each program is designed to reach a specific subpopulation of MSM injectors, or if each outreach program has a different goal, it may be appropriate to implement all the programs, as long as they are coordinated. Because the HIV Prevention Section is the organization with the most comprehensive perspective on citywide HIV prevention activities, it must be responsible for monitoring this coordination.

For additional information about strategies and interventions, please visit the websites described below:

### Center for AIDS Prevention Studies HIV Prevention Fact Sheets

<http://www.caps.ucsf.edu/pubs/FS/>

This site provides HIV prevention fact sheets on a range of topics that are customized based on the audience (e.g., gender, age, race or ethnicity). Each fact sheet is available in both English and Spanish.

### California HIV/AIDS Research Program

<http://chrp.ucop.edu/resources/index.html>

This site is a portal to several HIV/AIDS resources and research activities underway in California. The site provides links to statewide resources including a client management system, information on science-based education and prevention activities, a community forum and research clearinghouse, support for dissemination of research findings and resource materials, and

materials designed to help the development of indicators for monitoring and assessing progress toward HIV prevention in California.

## **California HIV Options (ChoiceHIV)**

<http://choicehiv.org/>

The ChoiceHIV website provides easily accessible information to assist prevention providers in planning education and prevention activities based on science. ChoiceHIV contains a comprehensive catalogue of HIV/AIDS prevention interventions. Prevention providers may search for appropriate interventions by choosing criteria that define the priority populations. Extensive resources are available to assist in development of evidence-based prevention programs and activities.

## **Compendium of HIV Prevention Interventions with Evidence of Effectiveness**

[http://www.cdc.gov/hiv/topics/prev\\_prog/rep/resources/initiatives/compendium.htm](http://www.cdc.gov/hiv/topics/prev_prog/rep/resources/initiatives/compendium.htm)

This site provides resources on interventions identified by CDC's HIV/AIDS Prevention Research Synthesis Project as having rigorous study methods and demonstrated evidence of effectiveness in reducing sex- and drug-related risk behaviors and/or improving health outcomes.

## **Diffusion of Effective Behavioral Interventions**

<http://www.effectiveinterventions.org/>

This site provides resources on projects that are designed to bring science-based community, group, and individual-level HIV prevention interventions to community-based service providers and state and local health departments. The goal is to enhance the capacity to implement effective interventions at the state and local levels, to reduce the spread of HIV and STIs, and to promote healthy behaviors.

## **CDC Replicating Effective Programs Plus**

[http://www.cdc.gov/hiv/topics/prev\\_prog/rep/](http://www.cdc.gov/hiv/topics/prev_prog/rep/)

The site provides resources on tested, science-based behavioral interventions with demonstrated evidence of effectiveness in reducing risky behaviors, such as unprotected sex, or in encouraging safer ones, such as using condoms and other methods of practicing safer sex. The interventions are translated into everyday language and put into user-friendly packages of materials.

## **CDC Recommendations & Guidelines**

<http://www.cdc.gov/hiv/resources/guidelines/index.htm>

This site provides resources on an array of guidelines that have been developed to support interventions in different settings.

## **HRSA HIV/AIDS Program Home**

<http://hab.hrsa.gov/provide/>

This site provides research, clinical guidelines, training programs, and information on the Ryan White HIV/AIDS program.

## **National Registry of Evidence Based Programs and Practice**

<http://www.nrepp.samhsa.gov/find.asp>

The site provides resources on interventions supported by the Substance Abuse and Mental Health Services Administration (SAMHSA). The site is a search engine that allows users to search for interventions by subjects such as topics, areas of interest, and study populations.

## **National Institute of Drug Abuse**

<http://www.nida.nih.gov/DrugPages/HIV.html>

This site provides publications, meeting announcements, and other resources on the link between drug use and HIV/AIDS. Information is available for medical and health professionals, researchers, and the general public.

## SECTION 1 Strategies

A strategy is a prevention approach that can be applied across a spectrum of possible interventions (e.g., peer education). HIV prevention providers may decide whether to select a strategy or strategies for delivering their interventions.

The following strategies are listed alphabetically and described in this section

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- **Addressing Substance Use**
- **Community Organizing**
- **Condom and Lubricant Distribution**
- **Engagement in HIV Care**
- **Harm-Reduction Options**
- **HIV Prevention in Medical Care Settings**
- **Opinion Leaders**
- **Partner Services and Disclosure Assistance**
- **Peer Education**
- **Perinatal Transmission Prevention**
- **Technology**
- **Treatment Adherence**

### Addressing Substance Use

Literature has shown that addressing substance use is effective in reducing HIV transmission (see Exhibit 11 for more information on addressing substance abuse). An analysis of the data reveals that the use of four substances is driving HIV in San Francisco (see p. 162 for the drivers of HIV), namely, cocaine/crack, alcohol (when used heavily), methamphetamine, and poppers (amyl nitrite).

In San Francisco, one study, Project EXPLORE, conducted a longitudinal analysis of methamphetamine, popper, and cocaine use and high-risk sexual behavior among a cohort of MSM. The study found that the use of methamphetamine, poppers, and snuffed cocaine declined during follow-up for most populations; however, it increased among the younger participants. Participants reported increased high-risk sexual behavior during periods of increased recreational use of these drugs. These findings suggest that, in order to reduce and prevent risks of HIV, any use of these drugs are not considered safe. HIV prevention interventions should focus on MSM who report either light or heavy use of methamphetamine, poppers, and snuffed cocaine (Colfax et al 2005). This data demonstrates that organizations must utilize and integrate effective strategies that address issues of substances use within their HIV prevention interventions.

Heavy alcohol use is another driver of HIV in San Francisco. A survey of heterosexuals in alcohol-treatment programs in San Francisco found HIV infection rates of 3% for men who were not sexually active with men or IDUs and 4% for women who were not IDUs. This was considerably higher than rates of 0.5% for men and 0.2% for women found in a similar population survey (Avins 1994). Another study found that sensation seeking is associated with alcohol use outcome expectations, as well as elevated rates of unprotected sex with casual partners. Alcohol use plays important roles in risks for STIs, particularly among gay male sensation seekers (Kallichman 2003).

Because substance use occurs along a continuum, from occasional use to dependency, organizations must be prepared to address substance use in the context of other behavioral health issues. It is important to address behavioral health issues that may affect both an individual's vulnerability to HIV and their ability to incorporate sexual and/or drug-related harm reduction measures to prevent HIV acquisition or transmission. The co-occurrence of mental health issues with substance use issues should be considered the norm, not the exception. Organizations that do not have comprehensive behavioral health services should create strong linkages to integrated substance use and mental health services for those clients who want and need such services.

The following studies have demonstrated that addressing substance use can support HIV risk reduction:

- Behavioral drug use treatments produced significant reductions in methamphetamine use and sexual risk behaviors, including among MSM (Shoptaw et al 2005). The Matrix Intensive Outpatient Program for the Treatment of Stimulant Abuse and similar interventions adopted for MSM have reduced risk (Rawson et al 2008).
- Contingency management is a behavior modification strategy that uses positive reinforcement (e.g., using vouchers to incentivize behavior change) to improve the clinical outcomes of substance users in treatment, especially sustained abstinence from drug use (Stitzer et al 2008).

DESCRIPTION	<p>This HIV prevention strategy involves addressing substance use and contextual factors that may increase an individual's risk for HIV acquisition and transmission. Organizations can either utilize specific strategies that focus on a priority population that uses substances (e.g., HIV prevention programs may choose to reach gay men who use methamphetamine), or can integrate known HIV prevention interventions and strategies within existing settings (e.g., a substance use program may choose to develop an HIV prevention program for transfemales).</p>
GUIDANCE FOR IMPLEMENTATION	<p>AGENCIES ADDRESSING SUBSTANCE USE SHOULD:</p> <ul style="list-style-type: none"> <li>• Incorporate harm reduction principles in the intervention;</li> <li>• Adapt and tailor the intervention to meet the needs of the priority population;</li> <li>• Address contextual life and environmental factors that facilitate substance use and be prepared to address comprehensive behavioral health issues; and</li> <li>• Be aware of and follow requirements for the particular intervention provided.</li> </ul>
RESOURCES	<p>SAMHSA NATIONAL REGISTRY OF EVIDENCE-BASED PROGRAMS AND PRACTICE:  <a href="http://www.nrpp.samhsa.gov/find.asp">http://www.nrpp.samhsa.gov/find.asp</a></p> <p>CONTINGENCY MANAGEMENT INTERVENTIONS: FROM RESEARCH TO PRACTICE:  <a href="http://ajp.psychiatryonline.org/cgi/content/full/158/5/694">http://ajp.psychiatryonline.org/cgi/content/full/158/5/694</a></p> <p>MATRIX INTENSIVE OUTPATIENT PROGRAM FOR THE TREATMENT OF STIMULANT ABUSE:  <a href="http://www.matrixinstitute.org/">http://www.matrixinstitute.org/</a></p> <p>NATIONAL INSTITUTE OF DRUG ABUSE:  <a href="http://www.nida.nih.gov/DrugPages/HIV.html">http://www.nida.nih.gov/DrugPages/HIV.html</a></p>
STRENGTHS	<p>Addressing HIV prevention in the context of individuals' substance use issues maximizes prevention effectiveness and provides people with holistic services that address the intersection of substance use and sexual activity.</p>
LIMITATIONS	<ul style="list-style-type: none"> <li>• While substance use services that address HIV may be paid for with federal and state HIV prevention funding, certain activities (e.g., narcotic replacement therapies and residential treatment) cannot be paid for with federal and state HIV prevention funding.</li> <li>• Programs that address HIV prevention in the context of individuals' substance use issues may require time and resource-intensive programming, in addition to a comprehensive behavioral-health approach, to effectively assist participants with making sustainable behavior changes.</li> </ul>

## Community Organizing

A number of studies have indicated that community organizing is an effective HIV prevention strategy and can also be cost-effective (Kahn 1995). Literature has shown that involving community stakeholders as partners—particularly when working with minority communities—is critical to preventing the spread of HIV (Eshel et al 2008). Furthermore, community organizing has been identified as an important strategy for HIV prevention among IDUs (Deren 2002). Results from studies of some programs that used this strategy include decreases in unprotected anal sex among gay men (Coates & Greenblatt 1990, Kegles et al 1996), higher willingness to give HIV prevention advice to drug-using friends and relatives among Latina/os and non-Latino Whites (Marin et al 1992), individual and community-level behavior change among gay and bisexual men (Bueling et al 1995), and increased knowledge and behavior change among Mexican gay men (Zimmerman et al 1997).

Community organizing can also be used to mobilize communities around policy issues, such as advocating for federal funding for syringe access (James 1998). Community empowerment has not been systematically incorporated into theory-based interventions because of a lack of consensus on what it means, how to implement it, and the strategies that should accompany it (Beeker et al 1998). Exhibit 12 describes community organizing and how to implement it.

DESCRIPTION	<p>Community organizing encompasses a wide range of strategies that involve community-wide efforts to create change and promote social justice. Community organizing can follow an action model (e.g., bringing together community members to advocate for a particular issue related to policy or resources), a popular education model (see the section on Empowerment Education Theory/Popular Education, p. 204), or other models. Examples of community organizing for HIV prevention include community-wide action to promote safer sex and drug use practices, to improve city treatment-on-demand policies, and to address the effects of racism on HIV risk.</p>
GUIDANCE FOR IMPLEMENTATION	<p>AGENCIES CONDUCTING COMMUNITY ORGANIZING CAMPAIGNS SHOULD:</p> <ul style="list-style-type: none"> <li>Allow the community to define the problem, the solution, and the course of action;</li> <li>Facilitate the process, participate in dialogue regarding HIV information, and secure resources to promote community involvement and assist the community in attaining its goals;</li> <li>Address multiple needs of communities or collaborate with other agencies that can address those issues;</li> <li>Acknowledge and consider adopting existing strategies that work in the community;</li> <li>Implement campaigns that develop and strengthen social norms for health-promoting behaviors;</li> <li>Include components that increase participants' self advocacy skills and senses of personal control and power;</li> <li>Seek changes that are sustainable, either within the community or structurally; and</li> <li>Give consideration to the time needed to achieve success given their goals.</li> </ul>
RESOURCES	<p>CDC'S GUIDELINES FOR HEALTH EDUCATION AND RISK REDUCTION ACTIVITIES:  <a href="http://www.cdc.gov/hiv/resources/guidelines/herrg/index.htm">http://www.cdc.gov/hiv/resources/guidelines/herrg/index.htm</a></p>
STRENGTHS	<ul style="list-style-type: none"> <li>Has a strong theoretical foundation.</li> <li>Addresses community-level obstacles to HIV risk reduction.</li> <li>Creates networks that can be used to conduct other interventions and builds stronger bonds between and within communities.</li> <li>Can contribute to health-promoting social norms.</li> <li>Suitable for communities that have a strong identification (e.g., geographically or culturally), and groups with multiple issues, although it also has challenges (see below).</li> <li>Useful for addressing structural change.</li> <li>Can be made up of several creative and dynamic interventions.</li> </ul>
LIMITATIONS	<ul style="list-style-type: none"> <li>More difficult to implement for isolated populations than those with a strong identity.</li> <li>May be challenging to organize populations that could be endangered as a result of the organizing (e.g., undocumented immigrants, drug users, or commercial sex workers could face consequences due to their illegal status and/or activities).</li> <li>Group may not prioritize HIV prevention.</li> </ul>

## Condom and Lubricant Distribution

A CDC fact sheet on condoms concludes that “*Latex condoms, when used consistently and correctly, are highly effective in preventing the sexual transmission of HIV, the virus that causes AIDS.*” (<http://www.cdc.gov/condomeffectiveness/latex.htm>). Lubricant should also accompany condom distribution, as use of lubricant may lower condom failure rates. Condom and lubricant distribution ensures their availability and accessibility, and condom distribution has also been associated with increased condom use among African American men and women in one community-level, targeted distribution effort (Cohen et al 1999). While several new studies are summarized below, much of the recent literature focuses on condom distribution in developing countries and cannot be clearly applied to San Francisco.

In 2005, the New York City Department of Health and Mental Hygiene made free condoms available to organizations through a web-based ordering system. The system was successful in increasing condom distribution from 5.8 million in 2004 to 17.3 million in 2006. In addition, 80% of patrons who saw the free condoms reported taking them, and 73% reported using them (Renaud et al 2009).

The cost savings to the health care system and society per condom used consistently and correctly is \$27 for high-risk heterosexuals and at least \$530 per condom for MSM (HPPC 2001), making this a highly cost-effective strategy. A study of cost-effectiveness of various interventions also determined condom distribution to be cost-effective for high-risk men and women (Pinkerton et al 2001). Exhibit 13 describes condom and lubricant distribution and how to implement it.

**DESCRIPTION** Condoms (female and/or male), lubricant, and other harm reduction materials for reducing sexual risk for HIV are distributed to members of the priority populations.

**GUIDANCE FOR IMPLEMENTATION** **CONDOM DISTRIBUTION SHOULD:**

- Be used in combination with other strategies or interventions (i.e., it is not an intervention in itself);
- Be accompanied by instructions for proper use, either verbal or written;
- Be accompanied by information about the risks of nonoxynol-9\*, if condoms with nonoxynol-9 are distributed;
- Include referrals to appropriate health and social services, including medical care, mental health, substance use, and HIV testing programs, STI testing and treatment, and other HIV prevention services; and
- Make available new condoms being marketed and sold, as technology improves.

\*Nonoxynol-9 is no longer recommended by the CDC as an effective means for preventing HIV transmission (<http://www.cdc.gov/hiv/pubs/mmwr/mmwr11aug00.htm>).

**RESOURCES** **CDC'S CONDOM AND STI FACT SHEET:**  
<http://www.cdc.gov/condomeffectiveness/latex.htm>

**STRENGTHS**

- May reduce barriers to safer sex for some populations (e.g., for those who cannot afford condoms, those who are uncomfortable buying condoms, such as teens).
- May increase ease of access to condoms (e.g., picking up condoms on the way into or out of a bar).

**LIMITATIONS**

- May have limited effectiveness in some populations unless accompanied by other interventions or strategies.
- May be controversial or prohibited in some settings (e.g., schools, correctional facilities).
- Some individuals may be allergic to latex and lubricants.

## Engagement in HIV Care

In the 2004 HIV Prevention Plan, the HPPC established linkage as a priority for San Francisco's HIV prevention services. Linkage was described as going "beyond handing out information or a phone number; the process includes providing support to the individual to access the services he or she is being referred to, as well as tracking referrals and referral follow-up." Engagement in care (as described on page 194 of Section V) goes beyond the initial process of linkage to ensuring that individuals are fully involved in the process of finding and maintaining HIV medical care.

In one article (Mugavero 2008), five factors were identified as important considerations in attempts to improve engagement in care:

- Initial linkage and subsequent retention are distinct processes;
- Engagement in care is vital for HIV treatment success at both the individual and population levels;
- Missed clinic visits can identify patients at high risk for poor health outcomes;
- Engagement in care is lower in groups bearing a disproportionate burden of the domestic HIV epidemic; and
- Ancillary services play a crucial role in improving linkage to and retention in care.

Organizations developing interventions for PLWHA should develop strategies that support long-term engagement in HIV care. (See Exhibit 14 for more information). The following studies have demonstrated strategies to engage clients in HIV care:

- Discharge planning upon release is critical for incarcerated individuals who are living with HIV to ensure continuity of care in the community (Wang et al 2008).
- Training for medical providers that includes effective communication skills, patient involvement, validation and empathy for life situations can increase engagement and retention for underserved PLWHA in timely and appropriate HIV care and services (Mallinson et al 2007).
- The use of case management may be associated with fewer unmet needs and higher use of medications for patients receiving HIV treatment (Katz et al 2001).
- Studies sponsored by HRSA have indicated that retention in care is positively associated with use of ancillary services including case management, transportation, housing, substance use, and mental health services (AIDS Care 2002).
- HRSA-sponsored Special Projects of National Significance initiatives involving peer navigators and other types of patient outreach have also demonstrated effectiveness in promoting retention in care (Tobias AIDS Patient Care STIs 2007).

DESCRIPTION	This HIV prevention strategy involves going beyond the initial process of linking individuals who are HIV infected to care by ensuring that they are fully engaged in HIV primary medical care. It involves the use of multiple interventions that address issues such as health literacy, readiness, health status perceptions, fear, stigma, missed appointments, substance use and mental health needs.
GUIDANCE FOR IMPLEMENTATION	AGENCIES ADDRESSING ENGAGEMENT IN HIV CARE SHOULD: <ul style="list-style-type: none"><li>• Ensure that clients are successfully linked to HIV care;</li><li>• Ensure that clients are engaged in care by supporting efforts to provide them with the resources and knowledge of the care system and how to use it;</li><li>• Monitor client medical appointments and ensure ongoing attendance;</li><li>• Train and work with medical providers to increase clients' engagement in care; and</li><li>• Ensure that clients are linked with and provided ancillary services.</li></ul>
RESOURCES	HRSA: <a href="http://hab.hrsa.gov/tools/HIVoutreach/HIVoutreach2.htm">http://hab.hrsa.gov/tools/HIVoutreach/HIVoutreach2.htm</a> <a href="http://hab.hrsa.gov/special/outreach_index.htm">http://hab.hrsa.gov/special/outreach_index.htm</a>
STRENGTHS	<ul style="list-style-type: none"><li>• Is vital for HIV treatment success at both the individual and community levels.</li><li>• Can build the clients' full participation in their medical care.</li><li>• Can build and/or strengthen collaboration and coordination of services.</li><li>• Can provide opportunities to link patients with other services on site (e.g., STI testing and treatment, mental health or substance use treatment and counseling).</li><li>• In San Francisco, access to care is available for people who are living with HIV.</li></ul>
LIMITATIONS	<ul style="list-style-type: none"><li>• Challenging for populations with other health disparities such as lack of housing and mental health and substance use issues.</li><li>• May not be effective for individuals who do not feel comfortable going to the doctor or who do not trust the medical system.</li><li>• May require medical care providers to attend additional training.</li></ul>

## Harm Reduction Approaches

A harm reduction approach to prevention accepts that persons engage in harmful behaviors, and the main goal is to reduce as much as reasonably possible the negative effects of the behavior rather than ignore or pass judgment on the persons or their behavior. Several studies establish the effectiveness of harm reduction approaches in regard to high-risk injection and sexual behaviors, particularly when used in combination with counseling and health education (Brettle 1991). Examples of harm reduction programs for injection drug use include methadone maintenance and syringe access programs. Studies show that methadone maintenance harm reduction programs are associated with lower levels of risk behavior (Margolin et al 2003) and lower seroconversion rates (Moss et al 1994). Syringe access has been shown to be a highly effective and cost-effective harm reduction approach as well (see Section III on Syringe Access and Disposal Programs, pp. 185-189).

Condom use is an example of a harm reduction approach to sexual behavior and has proved to be an extremely effective intervention. Other harm reduction approaches in relation to sexual behavior include withdrawal before ejaculation and negotiating to engage in oral instead of anal sex. Exhibit 15 describes harm reduction approaches and how to incorporate them into HIV prevention programs.

### EXHIBIT 15

## Harm Reduction Approaches

<b>DESCRIPTION</b>	A harm reduction approach to prevention accepts that harmful behavior exists, and the main goal is to reduce the negative effects of the behavior rather than ignore or pass judgment on the person or the behavior. The term "harm reduction" is used most often in the context of drug use, but it can be used with sexual risk behavior as well. Harm reduction encourages safer drug use and/or sexual practices among those engaging in high-risk behaviors and acknowledges the social and environmental factors that affect drug use and high-risk sexual behaviors, such as poverty, racism, and stigma.
<b>GUIDANCE FOR IMPLEMENTATION</b>	Agencies must comply with the San Francisco Health Commission's Resolution on Harm Reduction: <a href="http://www.sfdph.org/dph/files/hc/HCRes/Resolutions/2000Res/HCRes10-00.shtml">http://www.sfdph.org/dph/files/hc/HCRes/Resolutions/2000Res/HCRes10-00.shtml</a>
<b>AGENCIES UTILIZING HARM REDUCTION APPROACHES SHOULD:</b>	<ul style="list-style-type: none"><li>• Attempt to reach clients "where they are" to assist them in making healthy choices;</li><li>• Be attentive to the health and well-being of the entire person in considering when to use harm reduction options;</li><li>• Should tailor harm reduction options to the needs of the priority populations, taking into consideration the populations' norms and behaviors; and</li><li>• Provide referrals to appropriate health and social services, including medical care, mental health, substance use, STI testing and treatment, and other HIV prevention services.</li></ul>

**RESOURCES****HARM REDUCTION COALITION:**

<http://www.harmreduction.org>

**HARM REDUCTION THERAPY CENTER:**

<http://www.harmreductiontherapy.org>

**INTERNATIONAL HARM REDUCTION ASSOCIATION**

<http://www.ihra.net>

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**STRENGTHS**

- Accepts the stage where a person is and promotes skills for decreasing risk.
- Can be used in an institutional (e.g., drug-treatment facility) or community (e.g., outreach) setting.
- Can encourage safer injection practices and sexual risk reduction.
- Can encourage positive attitudes to risk reduction.
- Can provide linkages to drug treatment.
- Encompasses a continuum of behaviors.
- Recognizes the realities of poverty, class, racism, social isolation, past trauma, and discrimination.
- Can be used to reduce harm to both individuals and communities.

**LIMITATIONS**

- Does not totally eliminate the potential harmful effects of a behavior.
- Is not likely to be as useful for individuals who are not ready to change harmful behaviors as for those who are ready to change them.
- May lead to increased harmful behavior if not individually tailored (e.g., promoting withdrawal before ejaculation to someone who already uses condoms consistently could inadvertently lead to decreased condom use).

## HIV Prevention in Medical Care Settings

Integrating HIV prevention into medical care is yet another way to reach both high-risk HIV-negative and -positive individuals, especially those who might not otherwise be reached by HIV prevention messages. Interventions based in medical settings may be an especially effective way to conduct PWP, since approximately 80% of PLWH in San Francisco are already in care. Recent local studies have documented that some HIV-positive individuals are at high risk for transmitting HIV (Fisher et al 2004) and that Ryan White Act-funded clinics are missing critical opportunities to deliver HIV prevention messages to their patients (Morin et al 2004). One study indicated that showing a video in the waiting room of a clinic can be an effective intervention for HIV prevention (Warner et al 2008). Several studies have demonstrated that existing risk-based testing strategies are insufficient in identifying HIV-infected persons. In fact, persons with HIV infection often visit healthcare settings years before receiving an HIV diagnosis but are not tested. Implementation of screening for all patients could help identify HIV-positive persons earlier in the course of their infection (CDC 2008, <http://www.cdc.gov/hiv/topics/testing/resources/qaqaprofessional.htm>).

HIV prevention in the medical setting can make productive use of several types of interventions, all of which are described elsewhere in this chapter. HIV prevention services that can be offered in medical settings include the following (CDC 2003, <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5212a1.htm>):

- Providing HIV testing (see Section II, pp. 177-184)
- Asking patients about their sexual and drug use risk behaviors, counseling them to help them identify ways to reduce their risk, and reinforcing behavior change (see sections on interventions such as Individual Risk Reduction Counseling, pp. 244-245, Prevention Case Management, pp. 245-247, and Prevention with Positives, pp. 192-195)
- Referring patients to other services such as substance use or mental health treatment (see section on Recruitment and Linkages, p. 242)
- Facilitating partner services and disclosure assistance (see section on HIV Status Awareness, pp. 177-184)
- Identifying and treating STIs (see section on STI Detection and Treatment, pp. 260-262)

When HIV testing services are offered in the medical setting in San Francisco, all of the consent that apply to other test sites must be followed (see the section on HIV Status Awareness, pp. 177-184). This includes the requirement that all HIV tests be accompanied by post-test counseling. Exhibit 16 describes HIV prevention in medical settings.

## EXHIBIT 16 HIV Prevention in Medical Care Settings

DESCRIPTION	This strategy involves HIV prevention activities done in the context of medical care. Doctors, nurses, health educators and others can conduct the intervention.	225
GUIDANCE FOR IMPLEMENTATION	See recommendations for the particular intervention being provided.	
RESOURCES	MMWR report "Incorporating HIV Prevention into the Medical Care of Persons Living with HIV: Recommendations of CDC, the Health Resources and Services Administration, the National Institutes of Health, and the HIV Medicine Association of the Infectious Diseases Society of America" (2003): <a href="http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5212a1.htm">http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5212a1.htm</a>	
STRENGTHS	<ul style="list-style-type: none"><li>Has the potential to reach individuals who might not otherwise be reached by HIV prevention services.</li><li>May be especially effective for conducting prevention with positives.</li><li>May support the credibility of prevention messages.</li><li>Broadens medical care by personalizing prevention messages through connecting them to health and well-being.</li><li>Can be integrated into the medical setting in multiple ways, using various staff as the prevention messengers (e.g., doctors, nurses, physician's assistants, and health educators).</li><li>May be effective for individuals who feel comfortable sharing confidential information with their medical providers.</li><li>Provides opportunities to link patients with other on-site services (e.g., HIV testing, STI testing and treatment, mental health or substance use treatment and counseling).</li><li>Has been shown to be effective in other areas of health promotion, such as smoking cessation.</li></ul>	
LIMITATIONS	<ul style="list-style-type: none"><li>May be challenging to implement in medical settings, due to restricted time available for clinicians to meet with each patient.</li><li>May not be effective for individuals who are uncomfortable going to the doctor or who do not trust the medical system.</li><li>Medical providers may be reluctant or uncomfortable discussing sexual and drug use behaviors with patients.</li><li>May require additional staffing, especially if routine HIV testing is offered.</li><li>May require medical care providers to attend additional training.</li></ul>	

## Opinion Leaders

Opinion leader strategies have been shown to be effective for various populations. Opinion leaders can be peers of the population a program is trying to reach, celebrities, or others who have the potential to influence a community's opinions and norms. One study of an opinion-leader intervention among gay men showed decreases in the percentage of men engaging in unprotected anal sex, increases in condom use, and decreases in the percentage reporting multiple sex partners (Kelly et al 1991). Use of popular opinion leaders in an intervention for women living in low-income inner-city neighborhoods resulted in increased condom use and reduced unprotected sex (Sikkema et al 2000). This strategy was deemed cost-effective in two studies (Grossberg et al 1993, Kahn 1995). All recent research on the effectiveness of opinion leaders we are aware of has been focused on the developing world. Exhibit 17 describes the opinion leader strategy.

### EXHIBIT 17 Opinion Leaders

DESCRIPTION	Key people who are recognized as influential and charismatic members of a community or communities are identified to help influence the opinions and behaviors of a priority population through modeling of those opinions and behavior.
GUIDANCE FOR IMPLEMENTATION	<b>OPINION LEADERS SHOULD:</b> <ul style="list-style-type: none"> <li>• Be identified and determined by the priority population.</li> <li>• Be individuals who have the capacity to truly influence social norms.</li> </ul>
RESOURCES	CDC'S GUIDELINES FOR HEALTH EDUCATION AND RISK REDUCTION: <a href="http://www.cdc.gov/hiv/resources/guidelines/herrg/activities_individual_group.htm">http://www.cdc.gov/hiv/resources/guidelines/herrg/activities_individual_group.htm</a>
STRENGTHS	<ul style="list-style-type: none"> <li>• Appropriate for people with a group identification, those who recognize community leaders, those who value media heroes (e.g., youth), those with perceptions of low risk, and for groups in which social stigma exists for homosexuality or injection drug use.</li> <li>• Can affect the behaviors of the opinion leaders, as well as the priority audience.</li> <li>• May be able to easily involve leaders who endorse prevention messages.</li> </ul>
LIMITATIONS	<ul style="list-style-type: none"> <li>• May not be as effective for those without a particular community identification.</li> <li>• May increase awareness and knowledge of HIV and AIDS, but may not result in behavior change.</li> <li>• May be ineffective if the opinion leaders do not engage in HIV-preventive behaviors themselves.</li> </ul>

## Partner Services and Disclosure Assistance

The goal of the strategy is to reduce HIV transmission by offering individuals quality disclosure support and avenues for informing their sexual and/or syringe-sharing partners of possible exposure, and by providing interventions and other services to those partners. It is also important to recognize that co-infection with HIV and one or more other STIs and/or viral hepatitis is common. Persons diagnosed with HIV should be tested for other STIs and viral hepatitis and vice versa. The goal of disclosure and partner services is relevant to addressing viral hepatitis and STIs, such as syphilis, gonorrhea and chlamydia.

San Francisco recognizes that there can be more than one option for notifying partners of clients who may have been exposed to a communicable disease. Mechanisms for reaching partners of infected persons include the following:

- **Self-disclosure and referral.** A notification strategy in which the client assumes responsibility for informing his or her partner(s) of possible exposure to HIV and referring those partner(s) to appropriate services. During the interview with the client, the health or social services professional works to motivate the client to contact and notify partner(s) and prepares, assists and supports the client to determine when, where and how to notify the partner(s) as well as how to cope with potential reactions.
- **Dual-disclosure and referral.** A notification strategy in which a client discloses his/her HIV status to a partner in the presence of a health worker (e.g., counselor, case manager, health department staff). The strategy allows the client to receive support during the notification process and provides the partner with immediate access to counseling, testing, and other resources (e.g., referrals and linkages).
- **Partner Elicitation.** A health department or non-health department health or social services professional (e.g., counselor, case manager) gathers (elicits) partner information for confidential notification by health department specialists (see below).
- **Partner Notification.** A notification strategy in which health department staff (e.g., disease intervention specialist) or treating physician or surgeon confidentially notifies a partner of possible exposure. The partner information is gathered during the partner elicitation process (see above).
- **Internet partner notification (IPN).** The use of the internet for partner notification by health department staff or treating physician or surgeon. Using an email address or Internet screen name/handle, the identified partner(s) is notified of possible exposure to HIV or an STI and asked to contact the health department for follow up dialogue. Initial email contact with the identified partner(s) will not disclose any information about the diagnosis. Content will include language that urges the identified partner to contact the sender on an urgent health matter. When the client responds, he or she is encouraged to be tested/treated. IPN protocols include sending an email to the partner directly or contacting the partner through a social/sexual website. Clients can also notify partners either confidentially or anonymously using [www.inSPOT.org](http://www.inSPOT.org) (website specifically for partner notification).

In 2008, the CDC released revised recommendations for disclosure and partner services programs to include greater emphasis on partner notification. Given the persistence of HIV in many of our communities, San Francisco acknowledges disclosure and partner services must be approached in new ways. Among the advancements in knowledge in recent years is the increased data on partner notification that suggests this method may be effective in identifying new HIV infections (Mimiaga et al 2008). In fact, a recent study conducted in San Francisco found that 13% of partners who were notified and tested for HIV were newly identified as HIV infected (Ahrens et al 2006).

HIV disclosure and partner services have been underutilized in San Francisco, despite data indicating that they are effective in reaching large numbers of people. This may be due in part to cultural barriers and stigma, which can lead people to avoid disclosing. This also may be due to a lack of trust between clients and providers. A variety of disclosure and partner services options for clients are important, as no single approach will be acceptable to or effective for all populations. Exhibit 18 discusses partner services and disclosure assistance.

## EXHIBIT 18 Partner Services and Disclosure Assistance

HIV disclosure and partner services have been underutilized in San Francisco, despite data indicating that they are effective in reaching large numbers of people. This may be due in part to cultural barriers and stigma, which can lead people to avoid disclosing. This also may be due to a lack of trust between clients and providers. A variety of disclosure and partner services options for clients are important, as no single approach will be acceptable to or effective for all populations. This strategy should be offered to persons with HIV, STIs, and/or viral hepatitis and their sexual or syringe-sharing partners. By ensuring individuals disclose their status to partners, either in person, internet, or other mechanisms, the health, not only of individuals, but of communities can be improved.	
DESCRIPTION	Partner services and disclosure assistance include a broad array of services that assist individuals with disclosing their HIV, STI, and/or viral hepatitis status to others and provide opportunities for people who may have been exposed to become informed of their exposure and access services. This strategy should be offered to persons with HIV, STIs, and/or viral hepatitis and their sexual or syringe-sharing partners. By ensuring individuals disclose their status to partners, either in person, internet, or other mechanisms, the health, not only of individuals, but of communities can be improved.
GUIDANCE FOR IMPLEMENTATION	AGENCIES CONDUCTING HIV DISCLOSURE AND PARTNER SERVICES SHOULD:
	<ul style="list-style-type: none"><li>• Tailor all steps of the process to the behaviors, circumstances, acuity of the infection, and specific needs of each client;</li><li>• Maintain client/patient anonymity by not revealing any identifying information to field staff when providing partner information for partner notification. Breaches are punishable by law and can undermine community trust in and access to important public health programs and services;</li><li>• Ensure participation in the services is voluntary for both infected persons and their partners; they should not be coerced into participation;</li><li>• Ensure that services are accessible to all infected persons, regardless of where they are tested or receive a diagnosis and whether they are tested confidentially, anonymously, or neither. Because of the chronic nature of HIV infection, HIV disclosure and partner services should not be a one-time event. They should be offered to everyone and especially to HIV-infected persons when they learn their HIV status and should be available throughout their counseling and treatment. HIV-infected persons should be able to access partner services whenever needed; and</li><li>• Make sure partner services and disclosure assistance are a part of an array of services that are integrated for persons with HIV and viral hepatitis or other STIs and their partners.</li></ul>
RESOURCES	CDC PARTNER SERVICES WEBSITE: <a href="http://www.cdc.gov/nchhstp/partners/Partner-Services.html">http://www.cdc.gov/nchhstp/partners/Partner-Services.html</a> SFDPH TRAINING ON DISCLOSURE AND PARTNER SERVICES: <a href="http://www.sfhiv.org/testing_training.php">http://www.sfhiv.org/testing_training.php</a>

**STRENGTHS**

- Partners of persons with HIV infection or other STIs are at high risk for infection. This strategy provides a way for these persons to become aware of their risk and to access appropriate diagnostic, treatment, and prevention services.
- The community benefits from this strategy by helping reduce transmission rates and facilitating earlier identification and treatment of previously undiagnosed STIs, viral hepatitis, and HIV infection among its members.

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**LIMITATIONS**

- Services may not be accepted by clients.
- The potential for emotional or physical abuse by or against the original client as a result of disclosure must be addressed; however available data suggest that the rate of violence attributable to disclosure is low. Data on this issue are limited, and additional study is needed.
- The potential negative effect of disclosure on relationships (e.g., dissolution of a long-standing relationship).

## Peer Education

Numerous studies have shown that peer education is an effective approach to HIV prevention and can be cost effective (Pinkerton et al 2001). This strategy may be more effective in many situations than interventions delivered via non-peers (Catania et al 1991, Coates & Greenblatt, 1990, Dorfman et al 1992), especially for adolescents (Lem et al 1994), because peers may be viewed as more credible, more sensitive, and better able to understand the priority population. Studies of interventions that used a peer approach found that they resulted in:

- Reduced injection and sexual risk for HIV-positive and HIV-negative drug users (Latkin et al 2003, Latka et al 2008).
- Increased HIV knowledge and likeliness to engage in safe sex among adolescents (Mahat et al 2008).
- Increased condom use among HIV-positive gay and bisexual men (Wolitski et al 2005).
- Increased consistent condom use among HIV-positive women (Fogarty et al 2001).
- Increased HIV testing among high-risk youth (Johnson et al 2001).
- Cost-effective risk reduction for young gay and bisexual men (The Mpowerment Project, Kahn et al 2001).
- Reduced HIV risk behaviors among homeless and marginally housed women (Nyamathi et al 2001).
- Increased condom use and reduced unprotected sex among women living in low-income inner-city neighborhoods (Sikkema et al 2000).

Peer education can also have an effect on the peer educators themselves, in terms of knowledge, attitudes, and risk reduction (Pearlman et al 2002), which benefits them personally and promotes their credibility as educators.

Peer education is not always the most appropriate approach for every population or situation. For example, if an individual or population has multiple and complex issues (e.g., substance use and mental health), the benefits of an experienced professional social worker or counselor could easily outweigh the benefits of peer-based interventions. Ideally, HIV prevention programs using a peer education approach would seek to involve professionals, who are also peers, in the delivery of interventions. Exhibit 19 describes peer education and how to integrate it into HIV prevention programs and provide appropriate training.

DESCRIPTION	Services are provided to a priority population by individuals recruited from that population, which may be defined by behavior, culture, race, age, ethnicity, gender identification, or other salient factors.
GUIDANCE FOR IMPLEMENTATION	AGENCIES UTILIZING PEER EDUCATION APPROACHES SHOULD: <ul style="list-style-type: none"><li>Provide counseling, supervision, safety and support structures, and adequate wages or incentives for their peer educators;</li><li>Incorporate feedback and experiences of peer educators into ongoing program development;</li><li>Ensure diversity among peer educators and that they are perceived as credible and as true peers by the priority population;</li><li>Train peer educators to address behavior change, as well as provide information; and</li><li>Provide referrals to appropriate health and social services, including medical care, mental health, substance use, and STI testing and treatment, and other services.</li></ul>
RESOURCES	CDC'S GUIDELINES FOR HEALTH EDUCATION AND RISK REDUCTION: <a href="http://www.cdc.gov/hiv/resources/guidelines/herrg/activities_individual_group.htm">http://www.cdc.gov/hiv/resources/guidelines/herrg/activities_individual_group.htm</a>
STRENGTHS	<ul style="list-style-type: none"><li>Has a theoretical foundation in diffusion of innovations theory.</li><li>Draws on established social networks to disseminate information.</li><li>Can be used with individual, group, and community-level interventions and with all populations.</li><li>Can assist in changing the perception of norms regarding HIV and HIV risk behaviors.</li><li>Can assist in creating social networks that support and encourage self-protective behaviors.</li><li>Especially suited for populations that do not initially perceive themselves to be at risk.</li><li>Can lead to behavior change for the peer educators themselves.</li></ul>
LIMITATIONS	<ul style="list-style-type: none"><li>May not be appropriate for small or closed communities in which stigma may still be attached to HIV concerns or people desire anonymity. (Some groups may prefer to receive services from people outside their immediate community, so they can talk more freely and not fear disclosure of information.)</li><li>May not be as effective as an intervention delivered by a professional if an individual or population has multiple or complex issues (e.g., substance use, mental health).</li><li>Could be less effective if peer educators do not themselves adopt the behaviors and norms they are promoting.</li><li>Can be challenging to sustain due to educator fatigue or, among youth peers, growing too old to be perceived as a peer.</li></ul>

## Perinatal Transmission Prevention

Perinatal transmission is rare in San Francisco. According to the 2008 San Francisco HIV Annual report, all perinatally exposed infants born since 2005 have seroreverted and are now uninfected. The goal is to keep this number at zero through promoting voluntary HIV testing and partner services among four groups, as follows:

- Women seeking prenatal care;
- Women who deliver babies but who have not had any prenatal care;
- Male partners of women seeking prenatal care/delivering babies, and
- High-risk women of child-bearing age who are not currently pregnant.

If pregnant women learn their HIV-positive status before delivery, medications can be administered that greatly reduce the chance of transmission. Women who are not pregnant may also benefit from learning their status, as it can help them make informed decisions about pregnancy. Recent local studies have documented that making HIV testing a routine part of a perinatal test may increase testing rates (Cohan et al 2008b) and that streamlining the pre-test counseling process, while associated with lower HIV knowledge, does not compromise patients decision-making or satisfaction regarding HIV testing (Cohan et al 2008a).

All HIV prevention providers, regardless of the type of intervention or program, must have in place procedures for referring all high-risk individuals, including the above four groups, to HIV testing services. In addition, all public healthcare facilities must implement procedures for ensuring that all pregnant women are provided HIV health education about the importance of HIV testing and that an HIV test is planned, which women may decline. Exhibit 20 describes perinatal transmission prevention.

### EXHIBIT 20

### Perinatal Transmission Prevention

<b>DESCRIPTION</b>	This strategy requires the planning of HIV testing for all pregnant women during prenatal care.
<b>GUIDANCE FOR IMPLEMENTATION</b>	California law requires medical providers to inform the woman of the intent to perform an HIV test, the routine nature of the test, the purpose of the test, the risks and benefits of the test, the risk of perinatal transmission of HIV, that approved treatments are known to decrease the risk of perinatal transmission of HIV, and that the woman has the right to decline testing. If during the final review of prenatal medical tests, the medical provider engaged in the prenatal care of the woman or attending the woman at the time of labor or delivery finds the woman's medical records do not document an HIV test, the provider shall inform the woman, as noted above, and if not declined, the woman's blood should be tested by a method that will ensure the soonest possible results.
<b>RESOURCES</b>	MMWR report "Revised Recommendations for HIV Screening of Pregnant Women" (2001): <a href="http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5019a2.htm">http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5019a2.htm</a>

**STRENGTHS**

- Increases the number of women who know their HIV status and averts perinatal transmission.
- Has the potential to reach all pregnant women and their partners who might not otherwise be reached by HIV prevention services.
- May be especially effective for ensuring that women are linked to HIV health services.
- Can be integrated into the health care setting in multiple ways, using various staff as the prevention messengers (e.g., doctors, nurses, physicians' assistants, and health educators).
- Provides opportunities to link patients with other services on site (e.g., STI testing and treatment, mental health and/or substance use treatment and counseling).

**LIMITATIONS**

- May be a missed opportunity to provide HIV health education.
- May not be effective for individuals who do not feel comfortable going to the doctor or who do not trust the medical system.
- May require medical care providers to attend additional training.

## Technology

The Internet and other technologies, such as cell phones, are vehicles for conducting nearly every intervention described here, including outreach, social marketing (e.g., banner ads), and others. Use of technology to deliver HIV prevention messages and promote behavior change is becoming increasingly popular for at least two reasons: (1) it has the potential to reach large numbers of people, and (2) interventions can be targeted to high-risk groups, such as those seeking sex via websites and chat rooms.

Because this approach is relatively new, its effectiveness has not clearly been established. Results to date suggest that the Internet and cell phones are feasible technologies for delivering HIV prevention messages and interventions (Ybarra & Bull 2007). Evidence in support of its effectiveness, especially for gay men, includes the following:

- In a study conducted in the United Kingdom, most men thought that Internet sites should allow health workers into chat-rooms (75%); would click on a banner to find out about sexual health (78%); and said if they met a health worker in a chat-room they would find out what they had to say (84%) (Bolding et al 2004).
- The Internet plays a central role in many gay men's lives meeting sexual partners, and frequent unprotected anal sex is reported among gay male Internet users (Rebchook et al 2003).
- A community-based organization serving Asian men in Alameda County piloted a chat room-based HIV prevention outreach intervention, which was well-accepted and well-used by over 200 MSM clients over a one-year period (Huang & Hottes, presentation at CAPS conference, 2003).
- Internet outreach to gay men conducted in San Francisco has also been met with a positive community response (Knapper, presentation at CAPS conference, 2003).
- MSM and people with histories of STIs are more likely than others to report a willingness to get HIV prevention information through a website or chat room (Bull et al 2001).

MSM seeking sexual partners online may be at higher risk for HIV than their counterparts who do not seek sexual partners online (see Chapter 2: Community Assessment, pp. 60-147). Research indicates that the perceived anonymity of online chat rooms and the ability of health educators to form relationships with MSM in chat rooms may contribute to the success of online HIV prevention interventions (Rhodes 2004). However, this does not necessarily mean that Internet-based interventions are always sufficient or appropriate for these high-risk men. There may be underlying factors that contribute to increased unsafe sex among this group (e.g., mental health, sexual compulsion, community norms regarding disclosure of HIV status and condom use), and these are best addressed through in-person interventions. Exhibit 21 describes how to use the Internet as a strategy for HIV prevention.

## DESCRIPTION

The Internet is one vehicle for implementing many of the strategies and interventions described in this chapter. Listservs, social networking sites, blogs, banner ads, email newsletters, and websites are some examples of Internet mediums that can be used to deliver HIV prevention messages. Examples of conducting an intervention using the Internet include:

- Outreach and the provisioning of information;
- Risk reduction support provided over email;
- IRRC, SSG, or MSW done in a chat room;
- Social marketing banner ads promoting healthy behaviors;
- Listing of available HIV and STI services on websites;
- Creating community on social networking sites; and
- Online syphilis testing, in which individuals can print a lab form, take it to a designated provider, have their blood drawn, and access their results on line.

GUIDANCE FOR  
IMPLEMENTATION

## INTERNET-BASED INTERVENTIONS SHOULD:

- Be tailored to a particular population;
- Provide referrals to appropriate health and social services, including primary care, mental health, substance use, HIV, testing programs, STI testing and treatment, and other HIV prevention services;
- Be voluntary (e.g., chat room interventions should not coerce people into engaging in conversations they do not wish to have); and
- Follow all the rules of each Internet venue (e.g., chat room or website rules of conduct).

## RESOURCES

Web outreach information and training manuals are available from the National Alliance of State and Territorial AIDS Directors (NASTAD) website: [http://www.nastad.org/Docs/Public/Resource/2009929\\_NASTAD\\_Internet\\_TA\\_Meeting\\_Report\\_final\\_revised.pdf](http://www.nastad.org/Docs/Public/Resource/2009929_NASTAD_Internet_TA_Meeting_Report_final_revised.pdf) and <http://www.nastad.org/Programs/hivprevention/>

## STRENGTHS

- Can reach large numbers of people over a wide geographic area.
- Presents opportunities for prevention using the same channels people use to solicit sex partners (e.g., chat rooms).
- May be appealing for populations desiring anonymity.

## LIMITATIONS

- Will not reach those without Internet access or computer skills, who may be low-income or marginalized groups and at high risk for HIV.
- Will not reach those who are high-risk but do not use the Internet to meet sexual partners.
- Has the potential to compromise anonymity/confidentiality if identifying information is requested or given over the Internet.
- May be interpreted as intrusive if individuals have accessed a website/chat room for another purpose.
- Effectiveness is not yet established.
- Limited by the rules of the Internet service provider or chat room being used.
- Health Insurance Portability and Accountability Act (HIPAA) regulations may limit certain types of electronic correspondence when identifying information is used.

## Treatment Adherence

More effective treatment, also known as highly active anti-retroviral therapy or HAART, has had tremendous effects on HIV prevention and care. HAART has dramatically improved the length of survival and the physical well being of persons living with HIV/AIDS. Treatment may also decrease the opportunity for HIV transmission by lowering the amount of virus shed in blood and genital secretions. (see Exhibit 22.)

Treatment adherence is often discussed concurrently with engagement in medical care. While they may use similar interventions and address common social factors that hinder the process and/or outcomes, each strategy has distinct objectives that they aspire to achieve. Adherence refers to how closely a person follows a prescribed treatment regimen. It includes an individual's willingness to start treatment and his or her ability and willingness to take medications as directed.

Adherence affects how well anti-HIV medications decrease a person's viral load. Keeping HIV replication at a minimum is essential for preventing AIDS-related morbidity and mortality. Adherence to HIV treatment also helps prevent drug resistance. When a person skips doses, he or she may develop strains of HIV that are resistant to the medications he or she is taking and even to medications in the same class that he or she has not taken. This may leave a person with fewer treatment options should he or she need to change regimens in the future. Because drug-resistant strains can be transmitted to others, engaging in risky behavior can have especially serious consequences.

Organizations developing interventions for PLWHA should develop strategies that support long-term treatment adherence. The following studies have demonstrated strategies to address adherence:

- Case management may be a successful method to improve adherence to antiretroviral therapy and biological outcomes among HIV-infected homeless and marginally housed adults (Kushel et al 2006).
- Interventions and strategies that go beyond knowledge transfer may be needed to address self-efficacy among patients across all literacy levels to be successful in the management of difficult medication schedules (Wolf et al 2007).

DESCRIPTION	This HIV prevention strategy involves supporting and monitoring how closely a person follows a prescribed treatment regimen. It includes an individual's willingness to start treatment and his or her ability and willingness to take medications exactly as directed. This strategy can involve the use of multiple interventions, and providers should review the interventions section of this guide to select the appropriate activities.
GUIDANCE FOR IMPLEMENTATION	AGENCIES ADDRESSING TREATMENT ADHERENCE SHOULD: <ul style="list-style-type: none"><li>• Utilize a multidisciplinary team approach;</li><li>• Establish a trusting relationship with the client;</li><li>• Identify potential barriers to adherence prior to starting treatment;</li><li>• Provide resources for the client;</li><li>• Involve patients in treatment-regimen selection;</li><li>• Monitor side effects that may interfere with treatment adherence; and</li><li>• Work with the clients to monitor viral loads and CD4 T-cell counts.</li></ul>
RESOURCES	THE BODY'S REMEMBERING TO TAKE YOUR MEDICATIONS (ADHERENCE): <a href="http://www.thebody.com/index/treat/adherence.html">http://www.thebody.com/index/treat/adherence.html</a>
STRENGTHS	<ul style="list-style-type: none"><li>• Data shows that if one adheres to treatment, one is less infectious.</li><li>• Improves a person's health.</li><li>• May reduce transmission.</li></ul>
LIMITATIONS	<ul style="list-style-type: none"><li>• Social stigma concerning HIV may be an issue.</li><li>• Requires a medical provider or venue, and loss of access to healthcare may result in treatment loss.</li><li>• Once treatment is begun, it is a lifelong commitment.</li><li>• Many medical providers are not adequately trained on adherence counseling.</li></ul>

## SECTION 2

# Interventions

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### A. INDIVIDUAL-LEVEL INTERVENTIONS

An intervention is a type of service or prevention modality a program provides (e.g., recruitment and linkage, multiple session workshops). All HIV prevention programs must include an intervention or set of interventions. This section provides information and resources on different approaches to support community efforts to help reduce the acquisition and transmission of HIV. Interventions can be conducted one-on-one, in groups, at the community level, or through helping to reduce or address comorbidities such as STIs and viral hepatitis.

## What Are Individual-Level Interventions?

Individual-level HIV interventions provide relevant information, training, and/or support through personal interaction between a deliverer and a community member. These interventions seek to modify knowledge, attitudes, beliefs, self-efficacy, and emotional well-being. They can involve individualized risk-reduction counseling or motivational interviewing delivered by a trained counselor, educator, peer, or other professional.

The following individual-level interventions are described in this section in order of service intensity. For example, hotlines represent a lower-level of engagement, and post-exposure prophylaxis requires a higher-level of engagement.

- Hotline
- Venue-Based Individual Outreach
- Recruitment and Linkage
- Individual Risk-Reduction Counseling
- Prevention Case Management
- Post-Exposure Prophylaxis

### Hotline

Hotlines are an effective method for disseminating accurate information about HIV, a critical component of HIV prevention (Kalichman & Belcher 1997), but it is unclear to what extent they are linked to behavior change. One survey of repeat callers to the Southern California AIDS Hotline found that 50% of callers reported that they had increased their practice of safer sex, and for 72% of all callers the hotline had been their only source of HIV/AIDS information since their last call (AIDS Project Los Angeles 1993). One study looking at reasons people called a hotline indicated that many people called because of fears related to actual risk behaviors they had engaged in, indicating that this may be a good source of prevention information for some individuals (Kalichman & Belcher 1997). Further, hotlines may be a key method for linking people to HIV testing programs, especially those who might not be accessing other services where they would receive a referral to HIV testing. For example, a local hotline was a primary resource that individuals turned to in order to find out where to get an HIV test during a citywide campaign to promote testing (Hocking 2003). Hotlines have also been shown to be effective in providing risk reduction counseling for MSM (Picciano et al 2007). The seminal research for the effectiveness of hotlines was completed in the mid-1990s. Research continues to be done, but focuses on specific subpopulations. Exhibit 23 describes hotlines.

#### EXHIBIT 23

#### HOTLINE

PRIORITY POPULATION	Community members seeking knowledge on HIV prevention information and programs, as well as other support services.
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#### GOALS

- Deliver consistent prevention messages and make sure the messages are also consistent with those disseminated by other organizations.
- Provide referrals to HIV status awareness programs and other appropriate services.

**DESCRIPTION** A hotline is a confidential telephone service functioning as an education, referral, and help line for anonymous callers. Hotlines offer up-to-the-minute information on HIV and related issues, crisis intervention and counseling, and direction to other social services, as appropriate to client need.

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**DURATION** Based on individual callers' needs.

**SETTINGS** As a phone-based intervention, a hotline can be implemented wherever a telephone is available.

**STAFFING AND MINIMUM QUALIFICATIONS** Trained professionals on HIV and related health matters and crisis intervention.

**TOOLS AND GUIDANCE FOR IMPLEMENTATION**

**TOOLS:**

- Telephone system.
- Up-to-date listings of HIV prevention services and locations.
- Up-to-date listings of support services (e.g., substance use, mental health, and health centers/clinics).

**GUIDANCE FOR IMPLEMENTATION:**

- Training on problem-solving and crisis management.
- Collect process data to evaluate program outcomes.
- Provide counseling, adequate training, supervision, safety and support structures, and adequate wages or incentives to workers.

**RESOURCES** CDC'S GUIDELINES FOR PUBLIC INFORMATION:  
[http://www.cdc.gov/hiv/resources/guidelines/herrg/pub-info\\_hotlines.htm](http://www.cdc.gov/hiv/resources/guidelines/herrg/pub-info_hotlines.htm)

**STRENGTHS**

- Widely applicable to all groups at risk for HIV and particularly appropriate for people desiring anonymity, people in crisis, people needing basic information and answers, and people whose needs are not addressed by other HIV education efforts.
- Targets a wider geographical area than most interventions and thus can reach more diverse and isolated populations.
- Often provides a first link to prevention and care services.
- Serves preventive as well as de-stigmatizing functions.

**LIMITATIONS**

- May have limited usefulness in directly promoting behavior change.
- Can be expensive to operate.
- Is not as accessible for people without telephones.
- Cannot reach people who do not comfortably speak the language(s) offered.

## Venue-Based Individual Outreach

The seminal research for the effectiveness of venue-based individual outreach (VBIQ) was completed in the late-1990s and early 2000s. Research continues to be done, but focuses on specific subpopulations and the developing world. VBIQ is highly effective for:

- Increasing condom use (Wendell et al 2003);
- Decreasing injection-related risk behavior (Buchanan et al 2003, Coyle et al 1998, Weibel et al 1993, Watters et al 1990);
- Linking hard-to-reach populations living with HIV (e.g., high-risk youth) with care services (Martinez et al 2003);
- Providing access to HIV Counseling, Testing, and Referral (CTR) and increasing HIV testing rates among high-risk youth, especially when the outreach workers are peers and on-the-street CTR is offered (Johnson et al 2001, Gleghorn et al 1997);
- Reaching clients who might not otherwise be reached through traditional means and addressing their multiple needs (Tinsman et al 2001); and
- Decreasing sexual risk behavior (Birkel et al 1993).

Outreach can also be cost-effective, according to one assessment of the cost-effectiveness of various interventions (Pinkerton et al 2001). One article suggested that in order to avert the greatest number of infections among IDUs, funding should be focused on outreach (Wilson & Kahn 2003).

In San Francisco, there is a need for late-night and early-morning outreach for MSM non-IDUs, sex workers, and other populations that HIV prevention services might not otherwise reach (Pendo et al 2003). Outreach at these times could not only help to decrease risk behaviors but would also help link individuals to needed services, such as drug treatment and HIV testing programs. Such outreach should respect the fact that people are out late at night to have fun and should recognize the times when people are most open to intervention (e.g., before they hit the streets and/or when they are coming down from being high). Organizations should consider conducting outreach at the appropriate time to meet the needs of their priority populations. Exhibit 24 describes VBIQ and how and when to implement it.

### EXHIBIT 24 Venue-Based Individual Outreach

<b>PRIORITY POPULATION</b>	Individuals at high risk for acquisition and/or transmission of HIV.
<b>GOALS</b>	<ul style="list-style-type: none"><li>• Deliver consistent prevention messages and promote the services of the organization.</li><li>• Provide referrals to HIV status awareness programs and other appropriate services.</li></ul>
<b>DESCRIPTION</b>	VBIQ is a face-to-face interaction between an outreach worker (or a team of outreach workers) and a client or a small group of clients. VBIQ may be a one-time intervention or part of a long-term relationship established by the outreach worker with clients in a particular community. It may also be used to recruit individuals into HIV prevention programs, but must always include HIV education and referrals.
<b>DURATION</b>	Can be implemented as a brief encounter or a more extended encounter during which HIV prevention education and referrals are given.
<b>SETTINGS</b>	Street or in venues where the priority population may congregate* at appropriate times of the day, night, week, and year;

STAFFING AND MINIMUM QUALIFICATIONS	Trained peer outreach workers.
TOOLS AND GUIDANCE FOR IMPLEMENTATION	<p><b>TOOLS:</b></p> <ul style="list-style-type: none"> <li>• Printed health education/risk reduction information.</li> <li>• Prevention materials, such as safer sex supplies and sterile injection equipment.</li> <li>• Referrals to appropriate health and social services and HIV prevention, medical care, mental health, substance use, STI testing and treatment, and other support services.</li> </ul> <p><b>GUIDANCE FOR IMPLEMENTATION:</b></p> <ul style="list-style-type: none"> <li>• Develop an outreach plan that will reach high-risk populations at appropriate times, including late-night and early-morning hours, and at appropriate locations.</li> <li>• Develop methods for tracking referrals made to other services to the extent possible.</li> <li>• Collect process data to evaluate program outcomes.</li> <li>• Be consistent and involve client follow-up when possible.</li> <li>• Outreach workers should participate in ongoing trainings.</li> </ul>
RESOURCES	<p>CDC'S GUIDELINES FOR HEALTH EDUCATION AND RISK REDUCTION ACTIVITIES: <a href="http://www.cdc.gov/hiv/resources/guidelines/herrg/index.htm">http://www.cdc.gov/hiv/resources/guidelines/herrg/index.htm</a></p> <p>CALIFORNIA DEPARTMENT OF PUBLIC HEALTH'S OFFICE OF AIDS: <a href="http://www.cdph.ca.gov/programs/AIDS">http://www.cdph.ca.gov/programs/AIDS</a></p>
STRENGTHS	<ul style="list-style-type: none"> <li>• Can reach large numbers of people with a small number of staff.</li> <li>• Can be used to engage clients in other interventions, such as HIV testing programs, IRRC or PCM, when appropriate.</li> <li>• Can be implemented creatively, in combination with other interventions.</li> <li>• Appropriate for nearly all populations, especially those that are marginalized, difficult to reach, and/or not connected to the service system.</li> <li>• Can be used as a tool for building relationships and reaching people not engaged in services.</li> <li>• Can help establish contact, make referrals, and link individuals to services.</li> <li>• Can be implemented as a longer encounter (up to 20 minutes) or a brief encounter (5 minutes).</li> <li>• Can be used to introduce an agency and materials to a community setting and build community trust of an organization.</li> <li>• Can be helpful for enhancing self-efficacy.</li> </ul>
LIMITATIONS	<ul style="list-style-type: none"> <li>• May not be accepted or permitted in certain venues.</li> <li>• May not always meet clients' needs for services, especially if there is a lack of available referral resources.</li> <li>• Limited interaction/engagement.</li> <li>• Need workers who reflect the priority population.</li> <li>• May require teams for safety reasons.</li> <li>• Potential danger of late-night outreach.</li> <li>• Difficult to recruit and retain qualified staff.</li> <li>• Focuses on individual behavior change rather than social conditions.</li> <li>• Difficult to collect data on outreach shifts and evaluate effectiveness.</li> </ul>

\*Examples of venues are street corners, raves, schools, faith institutions, hospitals, sport leagues, gyms, the general assistance office, single room occupancy hotels (SROs), halfway houses, Internet chat rooms, outdoor cruising spots, bookstores, sex clubs, public housing, laundromats, crack houses, street fairs and other community events, massage parlors, porn theaters, bars, night clubs, community centers, and retail merchants.

## Recruitment and Linkage

Recruitment and Linkage interventions use many of the principles of outreach (VBIO) but have a primary goal of actively engaging a participant in order to enroll him or her into the services provided by the organization and/or linking clients to appropriate resources. The intervention goes beyond handing out information or a phone number; it includes providing support to the person to access the services he or she is being referred to, as well as tracking referrals and referral follow-up.

Active recruitment methods can be one-on-one interactions for a specific priority audience, group presentations, telephone screenings, person-to-person "peer" invitations, incentives, in-patient referrals and mandatory enrollments. Recruitment methods may also try to aid the client by being responsible for remembering the information or invitation to participate in an event and placing it on an organization instead. Methods such as requesting a contact number or email address allow the organization to actively follow-up with the individual to enroll him or her in services.

Given that many interventions are multi-session and require that organizations retain clients over a period of time, effective recruitment and retention will also have a major effect on the successful implementation of such interventions. Agencies need to understand how to develop recruitment and retention plans, how to assess whether their current recruitment and retention activities are effective in reaching their priority populations, and explore alternative recruitment and retention strategies as needed.

Studies have shown the following elements may promote successful recruitment efforts:

- Targeting places where participants seek healthcare and educating them about health issues. (Williams JR et al 2008)
- Using a two-phase strategy in which participants are first recruited into discussion groups and then offered enrollment into behavioral interventions. (Kanouse DE et al 2005)

It is also important for organizations to develop strategies and programmatic systems to ensure linkages to services within or outside the agency. Three common linkage strategies are as follows:

- **Participant confirmation:** The organization follows up with the participant to confirm that he or she accessed the referral services.
- **Provider confirmation:** The provider develops a network of referrals with cooperative Memoranda of Understanding, and the participant provides a release of information to confirm the referral.
- **Provider lead:** The organization develops a model whereby it personally accompanies the participant to the referral appointment.

Exhibit 25 describes recruitment and linkage.

### EXHIBIT 25 Recruitment and Linkage

PRIORITY POPULATION	Individuals at high risk for acquisition and/or transmission of HIV.
GOAL	Enroll and/or link high-risk populations to appropriate services.
DESCRIPTION	Recruitment and Linkage interventions use many of the principles of outreach (VBIO) but have a primary goal of actively engaging a participant in order to enroll him or her in the services provided by the organization and/or linking the client to appropriate resources.

**DURATION**

Can be done as a brief encounter (5 minutes) or more extended encounter (up to 20 minutes) during which HIV prevention education and referrals are provided.

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**SETTINGS**

Street or in venues where the priority population may congregate at appropriate times of the day, night, week, and year.\*

**STAFFING AND  
MINIMUM  
QUALIFICATIONS**

Trained peer recruiters.

**TOOLS AND  
GUIDANCE FOR  
IMPLEMENTATION****TOOLS:**

- Printed health education/risk reduction information.
- Information about the organization's services.
- Prevention materials, such as safer sex supplies and sterile injection equipment.
- Referrals to appropriate health and social services, HIV prevention, medical care, mental health, substance use, STI testing and treatment, and other support services.

**GUIDANCE FOR IMPLEMENTATION:**

- Develop a recruitment and/retention plan that is appropriate to the larger program model and priority population.
- Develop strategies and programmatic systems to ensure linkages to services within or outside the agency.
- Collect process data to evaluate program recruitment outcomes.
- Have staff participate in ongoing trainings.

**RESOURCES**

CDC'S PROVISIONAL PROCEDURAL GUIDANCE FOR COMMUNITY BASED ORGANIZATIONS:  
[http://www.cdc.gov/hiv/topics/prev\\_prog/AHP/resources/guidelines/pro\\_guidance.htm](http://www.cdc.gov/hiv/topics/prev_prog/AHP/resources/guidelines/pro_guidance.htm)

**STRENGTHS**

- Can reach large numbers of people.
- Can be implemented creatively in combination with other interventions.
- Appropriate for nearly all populations, especially those that are marginalized, underserved, and not connected to the service system.
- Can link individuals to services.

**LIMITATIONS**

- May not be accepted or permitted in certain venues.
- May not always meet clients' needs for services if there is a lack of available referral resources.

\*Examples of venues are street corners, raves, schools, faith institutions, hospitals, sport leagues, gyms, the general assistance office, single room occupancy hotels (SROs), halfway houses, Internet chat rooms, outdoor cruising spots, bookstores, sex clubs, public housing, laundromats, crack houses, street fairs and other community events, massage parlors, porn theaters, bars, night clubs, community centers, and retail merchants.

## Individual Risk Reduction Counseling

For many priority populations, individual risk reduction counseling (IRRC) is an intervention that is effective at changing drug use and sexual risk behaviors, whether by a brief single encounter, an extended more intensive encounter, or more than one encounter. Multiple encounters are more likely to result in behavior change. For example, Rotheram-Borus et al (2004) reported an increase in safer sex acts among injection drug users, with both in-person and telephone interventions. Crosby et al (2009) reported increased condom use and decreased numbers of partners among newly diagnosed STI patients receiving IRRC. A study by Kamb et al (1998) demonstrated an increase in 100% condom use and reduced repeat STIs among heterosexual adolescent and adult STI clinic patients with both an enhanced and brief IRRC intervention compared with didactic instruction alone. IRRC sessions with women living with HIV were effective at increasing self-efficacy and condom use in another study (Fogarty et al 2001). IRRC interventions using interactive video have also been effective in reducing drug and sexual risk behaviors among clinic patients living with HIV (Gilbert et al 2008). Although no specific cost-effectiveness information for this particular intervention was found in the literature, Kahn (1995) reported on one study that found an extended counseling intervention for IDUs to be cost-effective. Exhibit 26 describes IRRC and how and when to implement it.

### EXHIBIT 26 Individual Risk Reduction Counseling

PRIORITY POPULATION	Individuals at high-risk for acquisition and/or transmission of HIV
GOALS	<ul style="list-style-type: none"><li>• Deliver consistent prevention messages that eliminate or reduce sexual and/or injection drug transmission risk behavior</li><li>• Provide linkages to HIV testing programs and other appropriate services</li></ul>
DESCRIPTION	IRRC is a personalized, client-centered encounter between an individual and a trained counselor. IRRC is a time-limited intervention that can be used as a vehicle for transitioning clients into more intensive services.
DURATION	Counseling sessions that are 20 to 30 minutes long. May be delivered once or through several sessions.
SETTINGS	IRRC is highly mobile and can take place in an outreach setting, a person's home, shelters, clinics, community centers, over the telephone, or on the Internet.
STAFFING AND MINIMUM QUALIFICATIONS	Trained health educator in risk assessments and harm reduction. Organizations that include an IRRC session as a part of their HIV testing services must certify counselors in accordance to the State Office of AIDS requirements for counselor certification.

TOOLS AND  
GUIDANCE FOR  
IMPLEMENTATION

TOOLS:

- Printed health education/risk reduction information on HIV transmission and ways to prevent infection.
- Prevention materials, such as safer sex supplies and sterile injection equipment.
- Referrals to appropriate health and social services, HIV prevention, medical care, mental health, substance use, STI testing and treatment, and other support services.
- Risk assessments.

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GUIDANCE FOR IMPLEMENTATION:

- Conduct a risk assessment to determine the client's possible risk for HIV/STIs and other comorbidities.
- Develop risk reduction plan with the client to help reduce his or her sexual risk.
- Provide a sexual communication discussion to help improve the client's ability to communicate with partners to make safer sex decisions.
- Provide discussions with IDUs regarding safer injection and linkage to syringe programs.
- Track and follow up on referrals and linkages made.
- Collect process and behavioral data to evaluate program outcomes

RESOURCES

CDC'S GUIDELINES FOR HEALTH EDUCATION AND RISK REDUCTION ACTIVITIES:

[http://www.cdc.gov/hiv/resources/guidelines/herrg/activities\\_individual\\_group.htm](http://www.cdc.gov/hiv/resources/guidelines/herrg/activities_individual_group.htm)

STRENGTHS

- Generally suitable for all populations.
- Provides personal attention to individuals for whom privacy and confidentiality are important.
- Can help transition clients into more intensive services, such as Prevention Case Management (PCM, see pp XX).
- Offers flexibility and allows for a personalized approach for each client.

LIMITATIONS

- May be difficult to build trust with one-time clients.
- Does not address setting long-term goals with clients.

## Prevention Case Management

Prevention case management (PCM), also known as Comprehensive Risk Counseling and Services (CRCS), has only emerged in the last five years as a common approach to HIV prevention. Recent literature has shown that PCM is labor intensive and potentially costly to implement properly. For these reasons, PCM clients should be carefully chosen. Selected examples of research on its effectiveness include the following:

- The SFDPH HPS PCM/Multiple-Session Workshop (MSW) Outcome Study (information and results available from the SFDPH HIV Prevention Section, [dara.geckeler@sfdph.org](mailto:dara.geckeler@sfdph.org))
- The New York City Department of Health's HIV PCM Evaluation ([http://www.hunter.cuny.edu/schoolhp/centers/comm\\_urb/Current%20Projects/PCM.doc](http://www.hunter.cuny.edu/schoolhp/centers/comm_urb/Current%20Projects/PCM.doc))

Preliminary results from the SFDPH study indicate that PCM is effective at decreasing the highest risk sexual and injection behaviors (Sebesta 2003, unpublished report). Risk behaviors

among study participants decreased dramatically in the first month and remained low at four-month follow-up for both PLWH and HIV-negative individuals. However, PCM was no more effective at facilitating behavior change than MSWs. Since MSWs can reach more people, they may be more cost-effective (see section on MSWs, p. 252). However, PCM may be more appropriate than MSWs for some individuals or populations (e.g., people in crisis, people with mental health and/or substance use issues, people needing intensive support in linking to ancillary services, and people who would not feel comfortable attending a group intervention). Continuing analysis of data from this study will examine the efficacy of PCM in linking clients to needed substance use, mental health, care, prevention, and other health and social services. PCM is not intended to replace CARE case management for HIV-positive clients. The role of the prevention case manager is to work with the individual on prevention and behavioral change and to coordinate with the CARE case manager, who links the individual to CARE services.

An evaluation of a PCM program in Wisconsin that combined IRRC and case management showed that participants had a significant reduction in risk transmission behaviors including unprotected vaginal intercourse, insertive anal intercourse, or syringe sharing with partners of negative or unknown HIV status (Gasiorowicz et al 2005).

PCM has some unique characteristics compared with IRRC and group-level interventions that may make it the most suitable intervention for some individuals. For example, PCM is more intensive and involves a more ongoing relationship with the provider than IRRC does. Unlike group interventions, it is also an individually tailored service. Therefore, individuals who need intensive one-on-one support for dealing with life issues may benefit more from PCM than other types of interventions. PLWH are one such group, and, thus, PWP can be done using PCM. Exhibit 27 describes PCM and how and when to implement it.

## EXHIBIT 27 Prevention Case Management

<b>PRIORITY POPULATION</b>	Individuals at high risk for acquisition and/or transmission of HIV.
<b>GOALS</b>	<ul style="list-style-type: none"> <li>• Deliver consistent prevention messages that eliminate or reduce sexual and/or injection drug transmission risk behavior</li> <li>• Provide linkages to HIV testing programs and other appropriate services</li> </ul>
<b>DESCRIPTION</b>	PCM is a client-centered activity with the fundamental goal of promoting the adoption and maintenance of HIV risk-reduction behaviors by clients with multiple, complex problems and risk-reduction needs. The intervention is intended for persons having or likely to have difficulty initiating or sustaining practices that reduce or prevent HIV acquisition, transmission, and/or reinfection. As a hybrid of HIV risk-reduction counseling and traditional case management, PCM provides intensive, ongoing, individualized prevention counseling, support, and service linkage. This HIV prevention activity addresses the relationship between HIV risk and other issues such as substance use, STI treatment, mental health, and social and cultural factors. (CDC HIV Prevention Case Management Guidance, September 1997).
<b>DURATION</b>	Sixty- to ninety-minute sessions, with a minimum of four sessions per client.
<b>SETTINGS</b>	Private settings in community-based organizations and clinics.
<b>STAFFING AND MINIMUM QUALIFICATIONS</b>	Facilitators with experience as social workers, therapists, and/or trained counselors in motivational interviewing, harm reduction, and crisis management who are supervised by a licensed clinical social worker, marriage and family therapist, or equivalent.

TOOLS AND  
GUIDANCE FOR  
IMPLEMENTATION

TOOLS:

- Printed health education/risk reduction information on HIV transmission and ways to prevent infection.
- Prevention materials, such as safer sex supplies and sterile injection equipment.
- Referrals to appropriate health and social services, HIV prevention, medical care, mental health, substance use, STI testing and treatment, and other support services.
- Risk assessments.

GUIDANCE FOR IMPLEMENTATION:

- Conduct a risk assessment to determine the client's possible risk for HIV, STIs, and other comorbidities.
- Develop a risk reduction plan with the client to help reduce his/her risk for HIV.
- Engage in a dialogue on sexual communication discussion to improve the client's ability to communicate with his/her partners in order to make safer decisions during sexual encounters.
- Provide disclosure assistance and skill-building activities to support clients' concerns and improve their ability to disclose their HIV status in a way that leads to safer and healthier decision-making.
- Provide injection support (including syringe provision) with IDUs regarding safer injection and linkage to syringe programs.
- Provide linkage to care and maintenance in care over time to ensure that the client attends ongoing medical appointments, verification whether the appointments were kept and medical workups completed.
- Provide linkage to other support services to ensure that client appointments were kept and that the clients' support needs are being addressed.
- Collect process and behavioral data to evaluate program outcomes.
- Adhere to the "HIV Prevention Case Management: Standards and Guidelines for the Delivery of Services of San Francisco", developed by the Prevention Case Management Standardization and Evaluation Project Community Advisory Board (2000).

RESOURCES

CDC'S COMPREHENSIVE RISK COUNSELING AND SERVICES:

[http://www.cdc.gov/hiv/topics/prev\\_prog/CRCs/](http://www.cdc.gov/hiv/topics/prev_prog/CRCs/)

CDC HIV PREVENTION CASE MANAGEMENT LITERATURE REVIEW AND CURRENT PRACTICE (1997): <http://www.cdc.gov/hiv/pubs/hivpcml.htm>

CDC review of PCM programs across the country (Purcell et al 1998)

Please contact SFDPH HIV Prevention Section for the PCM Standards and Guidelines.

STRENGTHS

- More intensive, longer-term intervention than IRRC.
- Appropriate for PLWH high-risk HIV-negative individuals, and high-risk individuals who do not know their serostatus.
- Suitable for people seeking some stability/regularity in their lives and people who are reaching an action stage in dealing with health concerns.
- Can be implemented in a variety of settings (e.g., health care facilities, CBOs).
- Provides personal attention to individuals for whom privacy and confidentiality are important.
- Provides opportunities for linkages and referrals to other health and social services, including medical care, mental health, substance use, HIV testing programs, STI testing and treatment, and other HIV prevention services; referrals can be tracked and followed up on.
- Can support and maintain behavior change.
- Can address multiple barriers and cofactors.

LIMITATIONS

- Insufficient for creating community-wide influence unless accompanied by outreach or other interventions.
- Newer literature questions the cost and overall effectiveness of PCM. Providers should ensure that PCM is utilized carefully.

## Post-Exposure Prophylaxis (PEP)

Post-Exposure Prophylaxis (PEP), sometimes referred to as Post-Exposure Prevention, involves beginning administration of anti-HIV therapy to an individual who suspects that he or she has been exposed to HIV within 72 hours after the exposure. PEP has been used to prevent HIV seroconversion among (1) healthcare workers who have been exposed during their jobs (e.g., accidental needlesticks), and (2) individuals who may have been exposed through sexual contact or through sharing of injection equipment. Most of the recent literature focuses on the use of PEP in developing countries, but research relevant to the United States has been cited in this section. PEP is a clinical intervention, in that a treating physician must prescribe the medication. Currently, state and federal prevention funding cannot be used to pay for HIV medications, including those used for PEP.

Regarding occupational exposure, PEP has been shown to reduce the risk of HIV infection among exposed healthcare workers by 81% (Cardo et al 1997). The U.S. Public Health Service has established guidelines for the use of PEP in such situations, which can be accessed at the following URL: <http://www.cdc.gov/mmwr/preview/mmwrhtml/tr5409a1.htm>. PEP is most cost-effective for occupational exposure when targeted to those exposed to known HIV-positive sources and those with severe exposures (Marin et al 1999).

The use of PEP to prevent seroconversion among those who were exposed through sexual contact or injection drug use has been less well investigated than for occupational exposure. No data supporting PEP's effectiveness at preventing seroconversions exists, and there are numerous practical and ethical considerations that would make conducting such a study challenging. However, feasibility studies have been done. One recent study in San Francisco has documented that it is feasible to implement a PEP program for nonoccupational exposure (Kahn JO et al 2001). Study participants included 401 individuals potentially exposed to HIV and 64 of their partners through whom they may have been exposed. Most study participants were between 20 and 60 years old, White, and male. Among the individuals enrolled in the study, there were four known seroconversions in the 12 months following PEP administration. None of the four seroconversions had occurred in the first 6 months. All of the seroconversions appear to have occurred not as a result of the exposure incident for which they received PEP, but as a result of engaging in high-risk behaviors after receiving PEP (Roland 2003). Further, approximately 80% of MSM and female participants reported decreases in HIV risk behaviors at 6-month and 12-month follow-up (Martin et al in press). The U.S. Department of Health and Human Services has established recommendations for the use of PEP after non-occupational exposure (nPEP), which can be accessed at the following URL: <http://www.cdc.gov/mmwr/preview/mmwrhtml/tr5402a1.htm>.

How PEP is implemented could have substantial public health implications. For example, if people believe that PEP is available, might they be less likely to practice safer sex? The potential public health implications related to PEP should be considered as the guidelines and recommendations for the administration of PEP for sexual/injection drug use exposure evolve.

For sexual exposure, assuming PEP's efficacy, it has been determined to be cost effective in one study, but only for individuals who report receptive anal intercourse with a partner of unknown serostatus (Pinkerton et al 2001). (See Exhibit 28.)

### EXHIBIT 28 Post-Exposure Prophylaxis

PRIORITY POPULATION	Individuals who may have been exposed or potentially exposed to HIV within the previous 72 hours.
GOAL	Eliminate possibility of HIV acquisition.

**DESCRIPTION**

This intervention consists of beginning administration of anti-HIV therapy to people within 72 hours after they have been exposed or potentially exposed to HIV. It also includes the provision of or referrals to HIV testing programs. For individuals exposed through sexual contact or injection drug use, PEP also includes HIV risk reduction counseling and referrals to appropriate health and social services, including medical care, mental health, substance use, and other HIV prevention services.

**DURATION**

Initial medical visit and twenty-eight day treatment.

**SETTINGS**

Medical settings, including emergency rooms and STI clinics.

**STAFFING AND  
MINIMUM  
QUALIFICATIONS**

Medical providers knowledgeable about PEP

**TOOLS AND  
GUIDANCE FOR  
IMPLEMENTATION****TOOLS:**

- Protocol for PEP

**GUIDANCE FOR IMPLEMENTATION:**

- Conduct a risk assessment to determine the client's possible exposure to HIV.
- Provide prescription for treatment.
- Follow-up with patient to ensure completion of treatment.

**RESOURCES**

CDC'S NON-OCCUPATIONAL POST-EXPOSURE PROPHYLAXIS GUIDELINES:  
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5402a1.htm>

PUBLIC HEALTH SERVICE GUIDELINES FOR OCCUPATIONAL EXPOSURE:  
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5011a1.htm>

OFFERING HIV PEP FOLLOWING NON-OCCUPATIONAL EXPOSURES: Recommendations for Health Care Providers in the State of California: <http://www.cdph.ca.gov/programs/aids/Documents/RPT2004OfferingPEPFollowingNonOccupExp2004-06.pdf>

**STRENGTHS**

- Has been favorably received by gay and bisexual men, especially those at highest risk (Kalichman 1998).
- Used by those exposed through sexual means when made available (Kahn et al 2001).
- Provides opportunities for risk reduction counseling and referrals to ongoing HIV prevention services.

**LIMITATIONS**

- May act as a deterrent to risk reduction among high-risk populations if made widely available (Kahn et al 2001).
- Associated with many logistical and ethical issues that remain unresolved (e.g., who should administer PEP, who is eligible for PEP, how many times can a person get PEP).
- May not be as accessible to those exposed through injection drug use-related behaviors as for sexual behaviors (Kahn et al 2001).
- May have long-term effects that are as yet unknown.
- PEP has not been proven to be effective.
- Only available to those with health coverage, or who can afford the medication.

## What Are Group-Level Interventions?

B. Group-level HIV behavioral interventions are designed to influence individual risk behavior by changing knowledge, attitudes, beliefs, and self-efficacy in a small group setting. These interventions promote individual behavior change in situations where information and activities delivered by a trained counselor, educator, or other facilitator can be reinforced by peer pressure and support from other group members. The interventions often focus on the development of skills through live demonstrations, role-plays, and/or practice. Skills may include learning how to use condoms correctly, how to implement personal decisions to reduce risk, and how to negotiate safer sex effectively with partners.

This section provides information on the following group-level interventions, presented by level of effort required:

- Single Session Groups
- Multiple Session Workshops

### Single Session Groups

A number of studies have shown that single session groups (SSGs) can be effective at reducing sexual risk behavior in many different populations. They have also been shown to be cost effective in some populations and some contexts (Pinkerton et al 2001). However, multi-session interventions are more likely to have an effect (see the section on MSW, p. 252). Because of this, providers need to justify why they would implement an SSG when a MSW or other multi-session intervention would be appropriate and feasible. In some contexts, multi-session interventions may not be feasible (e.g., when clients are unlikely to attend multiple sessions), and in these cases SSG can be used. SSGs can be implemented as drop-in groups or as more structured interventions. Much of the research supporting the use of SSGs was conducted in the early 1990s, but the available recent literature is included.

Several effective SSG interventions have been described in the literature. Many of them use a peer-led approach, which may be part of the reason for their effectiveness (see the section on Peer Education, p. 231). Populations that have reported decreases in HIV risk behavior after participating in SSGs include:

- Female African-American and Latina adolescents (Jemmott et al 2005);
- Adolescents (Kennedy et al 2000a);
- Incarcerated individuals (Grinstead et al 1999);
- Gay Asian and Pacific Islander men in San Francisco (Choi et al 1996);
- African American male adolescents in Philadelphia (Jemmott et al 1992); and
- Gay and bisexual men in Philadelphia (Valdiserri et al 1989).

Exhibit 29 describes SSGs and how to implement them.

## EXHIBIT 29 Single Session Groups

PRIORITY POPULATION	Individuals at high risk for acquisition and/or transmission of HIV.
GOAL	Deliver prevention messages that eliminate or reduce sexual and/or injection drug transmission risk behavior.
DESCRIPTION	An SSG is a one-time intensive session that focuses on information about HIV (e.g., transmission, behavior change), motivational activities, skills-building, self-esteem issues, social support, and/or community building. It may also touch on other relevant issues specific to the priority population. This intervention may be implemented with planned groups, impromptu groups, drop-in groups, support groups, mobile-intervention vans as session sites, or other methods.
DURATION	Session duration varies based on topic and format.
SETTINGS	Private settings in community-based organizations and clinics accessible to the priority population.
STAFFING AND MINIMUM QUALIFICATIONS	Facilitators with experience as social workers, therapists, and/or trained health educators.
TOOLS AND GUIDANCE FOR IMPLEMENTATION	<p><b>TOOLS:</b></p> <ul style="list-style-type: none"><li>Printed health education/risk reduction information.</li><li>Topic/session protocol and/or interactive activities.</li><li>Prevention materials, such as safer sex supplies and sterile injection equipment.</li><li>Referrals to appropriate health and social services, HIV prevention, medical care, mental health and substance use services, STI testing and treatment, and other support services.</li></ul> <p><b>GUIDANCE FOR IMPLEMENTATION:</b></p> <ul style="list-style-type: none"><li>Advertise and promote through media and outreach.</li><li>Recruit participants via other activities, both HIV- and non-HIV-related.</li><li>Follow with additional support, follow-up groups, and/or "booster" groups.</li><li>Include ground rules created and adopted by participants.</li><li>Include discussions about issues beyond HIV, as appropriate (e.g., racism, homophobia).</li><li>Collect process data to evaluate program outcomes.</li></ul>
RESOURCES	CDC'S GUIDELINES FOR HEALTH EDUCATION AND RISK REDUCTION: <a href="http://www.cdc.gov/hiv/resources/guidelines/herrg/activities_ind-group.htm">http://www.cdc.gov/hiv/resources/guidelines/herrg/activities_ind-group.htm</a>
STRENGTHS	<ul style="list-style-type: none"><li>Appropriate for populations that cannot commit to multiple sessions.</li><li>Can recruit clients for other prevention-oriented activities.</li><li>Can contribute to shifting community norms if offered frequently and focused on particular topics of interest to the community.</li></ul>
LIMITATIONS	<ul style="list-style-type: none"><li>Not as effective as MSW at changing HIV risk behavior.</li><li>Less helpful for people with serious mental health issues, for the highest-risk populations, and for those most in denial about their risk.</li><li>Difficult to conduct outcome evaluation in terms of behavior change over time if clients are not linked to additional services.</li></ul>

## Multiple Session Workshop

A multiple session workshop (MSW) is a very versatile intervention because its content can be tailored to almost any population. Further, MSWs have demonstrated effectiveness at reducing various sexual risk-taking behaviors, as well as affecting knowledge and attitudes about HIV among several populations, especially when compared with SSGs.

Research on the effectiveness of MSWs as an intervention has been conducted for diverse populations, including:

- HIV-negative IDUs and IDUs living with HIV (Latkin et al 2003);
- Incarcerated men (Grinstead et al 2001);
- Men and women (Healthy Living Project Team 2007 and Fogarty et al 2001);
- African American gay and bisexual men in San Francisco (Peterson et al 1996);
- Gay and bisexual men in general (Roffman et al 1998), (Carey et al 2004);
- Heterosexual men (Elwy et al 2002);
- Low-income African American women (Carey et al 2000);
- Immigrant Latina women (Gomez et al 1999);
- STI clinic patients (Branson et al 1998); and
- Incarcerated African American and White women (St. Lawrence et al 1997).

MSWs have also been shown to be effective for a variety of sub-populations of adolescents, including: youth living with HIV (Rotheram-Borus et al 2001), homeless adolescents (Rotheram-Borus et al 1991), male and female adolescent African Americans (DiClemente & Wingwood 2004, St. Lawrence et al 1995), and middle school students (Levy et al 1995).

Finally, an MSW is likely a cost-effective intervention, depending on the specific priority population and the context in which it is implemented (Pinkerton et al 2001, Pinkerton et al 2002). In addition, preliminary results from a local study show that MSW is no more or less effective at creating behavior change than PCM. Because PCM only reaches one individual at a time and MSW can reach multiple people, the MSW may be a more cost-effective intervention for people who would attend a group-level intervention and do not need or want more intensive one-on-one counseling and support (see also the section on PCM, p. 246). Exhibit 30 describes MSWs and how to implement them.

### EXHIBIT 30 Multiple Session Workshop

PRIORITY POPULATION	Individuals at high risk for acquisition and/or transmission of HIV.
GOALS	<ul style="list-style-type: none"> <li>• Deliver prevention messages that eliminate or reduce sexual and/or injection drug transmission risk behavior.</li> <li>• Improve coping with the combined stressors of HIV and other contextual factors.</li> <li>• Increase skills that address HIV risk behaviors.</li> </ul>
DESCRIPTION	MSW is a curriculum-based series of workshops, groups, or meetings that introduce HIV issues and link them to other life issues not easily or immediately understood as relating to HIV. The expectation is that the same individuals will attend all sessions in a series. Each workshop session's topics usually build on those from previous sessions. Groups may be mixed or serostatus-specific, structured, or need/issue-driven for risk reduction and psychosocial support. Groups can be held in a variety of community settings.

DURATION	Session times vary based on topic and format, but with a minimum of a three-session series.
SETTINGS	Private settings in community-based organizations and clinics accessible to the priority population.
STAFFING AND MINIMUM QUALIFICATIONS	Facilitators with experience as social workers, therapists, and/or trained health educators.
TOOLS AND GUIDANCE FOR IMPLEMENTATION	<p><b>TOOLS:</b></p> <ul style="list-style-type: none"> <li>Printed health education/risk reduction information.</li> <li>Structured curriculum and/or interactive skill-building activities.</li> <li>Prevention materials, such as safer sex supplies and sterile injection equipment.</li> <li>Referrals to appropriate health and social services, HIV prevention, medical care, mental health, substance use, STI testing and treatment, and other support services.</li> </ul> <p><b>GUIDANCE FOR IMPLEMENTATION:</b></p> <ul style="list-style-type: none"> <li>Advertise and promote through media and outreach.</li> <li>Recruit participants via other activities, both HIV- and non-HIV- related.</li> <li>Follow with additional support.</li> <li>Include ground rules created and adopted by participants.</li> <li>Include discussions about issues beyond just HIV, as appropriate (e.g., racism, homophobia).</li> </ul>
RESOURCES	<p><b>CDC'S GUIDELINES FOR HEALTH EDUCATION AND RISK REDUCTION:</b></p> <p><a href="http://www.cdc.gov/hiv/resources/guidelines/herrg/activities_ind-group.htm">http://www.cdc.gov/hiv/resources/guidelines/herrg/activities_ind-group.htm</a></p>
STRENGTHS	<ul style="list-style-type: none"> <li>Better than SSGs for addressing HIV risk-reduction issues and strategies in depth, dealing with the underlying causes of unsafe behavior, and creating behavior change.</li> <li>Attract people seeking connection with others who have shared experiences and interests (e.g., gay men seeking social contacts and support outside of the gay bar scene).</li> <li>Suitable for people with high perception of personal risk, people who are already highly motivated to attend groups, people who desire structure (e.g., some homeless and/or jobless people), and people who can commit to attending sessions on an ongoing basis.</li> <li>Provides an opportunity for people to talk about sexual and drug-related behaviors with their peers.</li> <li>Feasible to conduct in institutional settings (e.g., schools, treatment centers, prisons/jails).</li> <li>Can contribute to shifting community norms when focused on particular topics of interest to the community.</li> <li>Long-term knowledge and skill building supports behavior change.</li> <li>Fosters ownership and promotes active involvement and leadership.</li> </ul>
LIMITATIONS	<ul style="list-style-type: none"> <li>May have limited effectiveness with populations that are unlikely to disclose or discuss their risk behaviors (e.g., MSM who live heterosexual lives, people engaging in survival sex).</li> <li>May not be as effective or appropriate for mentally ill populations or people with limited free time (e.g., people who are struggling to hold onto housing/employment or juggling home, kids, education, and/or work).</li> <li>May pose challenges regarding retention.</li> </ul>

## What Are Community-Level Interventions?

### C. COMMUNITY-LEVEL INTERVENTIONS

Community-level HIV interventions are designed to influence individual risk behavior by changing knowledge, attitudes, and beliefs in a defined community. These interventions can motivate and reinforce behavior change in individuals who do not participate directly in the intervention by promoting norms that support safer sex through awareness campaigns, and community mobilization efforts.

This section provides information on the following community-level interventions, ordered by level of effort required:

- Social Marketing
- Venue-Based-Group Outreach

### Social Marketing

Social marketing is about more than providing information and messages. It is a holistic community-level approach that uses commercial marketing techniques to benefit individuals and society, with the goal of achieving changes in behaviors, attitudes, and community norms to promote health.

Social marketing has been used extensively in many developing countries to promote maternal and child health and has been extended to HIV prevention. In the U.S., social marketing has been successful in the areas of tobacco control, teen pregnancy, and other issues, as well as HIV prevention. Examples of successful local and other social marketing campaigns related to HIV prevention include the following:

- An evaluation of a San Francisco social marketing campaign called "HIV Stops With Me" revealed that the campaign was widely viewed, well-recalled, and persuasive. Fifty-six percent of survey respondents reported that they were more likely to use condoms with HIV-negative or unknown serostatus partners after viewing the campaign (Bailey et al 2003).
- In an evaluation of a campaign to increase awareness of HIV risk among same-gender-loving African American men engaging in sex/drug exchange in the Tenderloin, the majority of survey respondents reported that the ads reflected their daily environment and caused them to stop and think about HIV transmission when exchanging drugs for sex (David Binder Research, unpublished report, 2003).
- An evaluation of a San Francisco social marketing campaign called "Resist Meth" revealed that the campaign was widely viewed, well-recalled, and persuasive. Seventy-nine percent of respondents agreed that after seeing the campaign, they felt that crystal meth was "a problem among gay/bi men in San Francisco." Fifty-eight percent felt that "meth use was less socially acceptable in the community." Seventy-one percent agreed that "the community is coming together to confront the meth problem." (Paquette et al 2008).
- A review of calls to the San Francisco HIV/AIDS hotline revealed that during a social-marketing campaign to promote testing, overall call volume increased, the number of calls resulting in referrals to HIV testing services increased, and the percentage of callers citing television or bus ads/billboards (the locations where the campaign ads appeared) as the impetus for calling increased (Hocking 2003).
- Social marketing has also been used successfully in non-San Francisco locales to recruit gay men from multiple subgroups, including men of color, youth, and closeted men, for HIV prevention counseling (Fisher et al 1996), to increase dialogue and awareness of HIV among gay men (Dawson and Hartfield 1996), to motivate gay men to get tested for HIV (Dawson & Hartfield 1996), and to increase condom use among adolescents (Kennedy et al 2000b).

Social marketing campaigns are based on and guided by research with the priority population. The first step is to gain an in-depth understanding from and about the priority population through primary and secondary research. Based on the findings from this research, the appropriate behavioral objectives, interventions, messages, materials, programs, and evaluations can be designed. All these elements are based on intimate knowledge of the priority population and its members' lifestyles, values, beliefs, attitudes, fears, and hopes. It is also important to understand how social marketing messages can be crafted to successfully compete with other messages the priority population is receiving. For example, a social marketing campaign promoting condom use among gay male drug users must compete with community norms that do not support condom use. Campaigns that are more focused (e.g., on a particular issue among a particular audience) have a greater affect if they can achieve significant visibility among the population.

Social marketing campaigns must have what are called the "4 Ps" of marketing: product, price, place, and promotion. The 4 Ps are defined as follows:

- **Product:** The behavior or idea the campaign is trying to promote. The product must be presented in a way that addresses benefits that are relevant and motivating to the priority audience. For example, a campaign intended to encourage people to get an HIV test must speak to the benefits of getting tested from the perspective of the priority audience; these might include benefits such as peace of mind, empowerment, and caring for oneself and one's partner.
- **Price:** The monetary and other costs/disadvantages associated with adopting the behavior or idea. For example, the costs of adopting safer sex practices might include money (for condoms), time (to discuss condom use with partners), a perception that pleasure will be reduced, and fear of rejection or abuse resulting from asking a partner to use a condom. Social marketing campaigns must attempt to show how the benefits outweigh the costs.
- **Place:** Whether people are in the right frame of mind to pay attention to the message, where people will act on the message, and whether the campaign promotes a product or service (such as HIV testing programs) where the product or service is provided. Research done prior to implementing a social marketing campaign must explore what the best places are for the priority population (e.g., at bars, in sex clubs, on the streets, through social service agencies, etc.) For example, a campaign to promote HIV testing should consider what changes, improvements, and preparations need to be made at HIV testing sites within the area where the campaign is being implemented.
- **Promotion:** The media channels and communication methods that will be used to disseminate the message. Social-marketing campaigns can use a number of methods to get a message out. Some of these methods are television (e.g., public service announcements), radio, posters (e.g., on bus shelters), billboards, newspaper ads, the Internet, brochures, pamphlets, palm cards, videos, and other creative promotional items.

Exhibit 31 describes social marketing and how to implement it.

PRIORITY POPULATION	Specific communities defined by race, gender, sexual orientation and other defined characteristics.
GOALS	<ul style="list-style-type: none"> <li>• Build general support for safe behavior.</li> <li>• Support personal risk reduction.</li> <li>• Inform persons at risk about infection and how to obtain specific services.</li> <li>• Decrease stigma and prejudice against persons living with HIV.</li> </ul>
DESCRIPTION	<i>"Social marketing is the use of marketing principles and techniques to influence a priority audience to voluntarily accept, reject, modify, or abandon a behavior for the benefit of individuals, groups, or society as a whole." (Kotler et al 2002). Social marketing campaigns can aim to affect behavior through influencing knowledge, beliefs, attitudes, and/or norms.</i>
DURATION	Duration varies but should be enough period of time for the priority audience to interact with the campaign materials.
SETTINGS	Settings vary based on types of media utilized, but the product must be positioned to maximize benefits and minimize costs.
STAFFING AND MINIMUM QUALIFICATIONS	A person in charge who manages the program and staff who specialize in the form of media planned to be used for the product being developed.
TOOLS AND GUIDANCE FOR IMPLEMENTATION	<p><b>TOOLS:</b></p> <ul style="list-style-type: none"> <li>• The tools necessary to develop a social marketing intervention vary with the type of media that is planned for the product being developed.</li> </ul> <p><b>GUIDANCE FOR IMPLEMENTATION:</b></p> <ul style="list-style-type: none"> <li>• Ensure that the campaign is based on consumer research that illuminates consumers' lifestyles, values, attitudes, hopes, and fears about HIV and how they understand the disease in the context of their lives.</li> <li>• Identify the behaviors the program will seek to promote or to reduce or eliminate. These should be behaviors that can be realistically achieved, and the campaign should focus on people most receptive to change.</li> <li>• Develop a measurable objective that is clearly linked to and supports HIV prevention goals.</li> <li>• Link the priority population to appropriate resources.</li> <li>• Develop an implementation plan and time schedule.</li> <li>• Conduct focus groups and activities planned to fit what the community and priority audience need and want.</li> <li>• Ensure that the campaign is visible enough and sustained over enough time to make an impact.</li> <li>• Collect process and behavioral data to evaluate program outcomes.</li> </ul>

**RESOURCES****CDC'S GUIDELINES FOR HEALTH EDUCATION AND RISK REDUCTION ACTIVITIES:**

<http://www.cdc.gov/hiv/resources/guidelines/herrg/index.htm>

**CDC NATIONAL CENTER FOR HEALTH MARKETING:**

[http://www.cdc.gov/communication/cdc synergy\\_eds.htm](http://www.cdc.gov/communication/cdc synergy_eds.htm)

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**STRENGTHS**

- Reflects the life context of the priority population and the messages they think are best, because research with the priority population forms the basis for the campaign.
- Can have a broader effect than individual-level interventions because it addresses the community norms and values that influence behavior.
- When implemented effectively (e.g., appropriate visibility and message), can become sufficiently memorable and motivating to be self-sustaining (i.e., the campaign message becomes known throughout the community, e.g., "HIV Stops With Me").
- Can be accessible to those who are difficult to reach through traditional prevention channels because it can reach large and diverse segments of the population (e.g., Mizuno et al 2002)

**LIMITATIONS**

- Can be costly. Campaigns have high start-up costs and funding must be sustained over time for campaigns to exist long enough (e.g., months or years) to have an effect.
- Evaluation of social marketing can be costly, and it is challenging to link resulting behavior changes directly to the effects of the campaign.
- May result in little or no effect if sufficient research is not conducted up front.
- Can be challenging to implement, because campaigns must take complex issues and behaviors and translate them into short and simple messages. This has occasionally resulted in controversy.
- May be unsuccessful with those who are isolated and/or do not identify with the messages or people depicted in the campaign.
- May not be effective for people with low literacy if written materials are used.

## Venue-Based Group Outreach

Venue-Based Group Outreach (VBGO) has been found to be an effective intervention for reaching certain consumers who might not otherwise have access to HIV prevention services. It differs from VBGO in that the focus of the intervention is to reach large numbers of people with multiple approaches, as opposed to spending concentrated time with individuals. VBGO has the potential to influence knowledge, attitudes, and behavioral intention. It is difficult to say whether it leads to behavior change because most VBGO events do not have a post-intervention follow-up component to track participants' behaviors. A few studies have examined the effectiveness of this kind of intervention. In one study, VBGO was found to be more effective for reaching high-risk young gay men compared with small group workshops (Kegeles et al 1996). A study conducted in London found VBGO to be an effective intervention to reach gay men in large cities (Bonnell et al 2006). Exhibit 32 describes VBGO and how to implement it.

### EXHIBIT 32 Venue-Based Group Outreach

PRIORITY POPULATION	Communities at high risk for acquisition and/or transmission of HIV.
GOALS	<ul style="list-style-type: none"><li>• Deliver consistent prevention messages and promote the services of your organization.</li><li>• Provide referrals to HIV testing programs and other appropriate services.</li></ul>
DESCRIPTION	VBGO is outreach conducted with the goal of reaching large numbers of people with multiple approaches in community settings, including commercial venues and public events. VBGO can take a variety of forms, including information booths, community theater, or brief skits or role plays that are designed to promote HIV risk reduction among audience members. The distribution of appropriate prevention materials (e.g., condoms and lubricant) may also be a component of these activities.
DURATION	Duration varies based on the event.
SETTINGS	Street corners, public fora, speakers' bureaus, bars, sex clubs, street fairs, health fairs, and parades.
STAFFING AND MINIMUM QUALIFICATIONS	Event coordinator and trained peer outreach workers.

TOOLS AND  
GUIDANCE FOR  
IMPLEMENTATION

TOOLS:

- Printed health education/risk reduction information.
- Prevention materials, such as safer sex supplies and sterile injection equipment.
- Referrals to appropriate health and social services, HIV prevention, medical care, mental health, substance use, STI testing and treatment, and other support services.

GUIDANCE FOR IMPLEMENTATION:

- Respect the operating conditions at, and contribute to the spirit of, the venue/event.
- Make it interactive and engaging.
- Emphasize community unity, creating a positive environment in which participants can socialize and mingle.
- Encourage networking among members of different communities, through sharing of information and resources.
- Conduct in safe environments for the priority audience.
- Provide an opportunity for confidential, one-on-one referrals to HIV prevention or other services before or after the intervention.
- Develop methods for tracking referrals made to other services, to the extent possible.
- Collect process data to evaluate program outcomes.
- Outreach workers should participate in ongoing trainings.

RESOURCES

CDC'S GUIDELINES FOR HEALTH EDUCATION AND RISK REDUCTION ACTIVITIES:  
<http://www.cdc.gov/hiv/resources/guidelines/herrg/index.htm>

STRENGTHS

- Can reach people who identify with a community, group scene, or social group.
- Suitable for groups with multiple issues and barriers to change, groups with a lack of access to services, people with a low perception of risk, people needing basic information and referrals, and people who have never experienced another intervention.
- Can provide a forum for dialogue between friends and family (community building).
- Can encourage individuals and communities to participate in other prevention activities.
- Reach high-risk populations at appropriate times, including late-night and early-morning hours, and at appropriate locations.
- Good for introducing a topic to a large group and then following up with in-depth one-on-one interventions.
- Non-threatening due to group context and familiar setting.
- Can tailor message to different groups.

LIMITATIONS

- May not be as effective for reaching people who do not identify with a group or community.
- Unclear whether it can influence behavior.
- May be less effective in changing behavior than for introducing messages.
- Less effective when the venue is not structured.

## D. INTERVENTIONS FOR DETECTING AND TREATING COMORBIDITIES

### What Are Comorbidities?

A comorbidity describes the effect of other diseases an individual might have other than the primary disease of interest. For example in San Francisco, research shows that gonorrhea is a driver of the HIV for the populations at highest risk for new infection, and there is an increase prevalence of syphilis among gay men living with HIV/AIDS. The section also focuses on information on tuberculosis, as well as viral hepatitis prevention, transmission risk and issues regarding co-infection with HIV/AIDS. The goal is to improve collaboration among programs in order to enhance integrated service delivery at the client level, or point of service delivery.

This section provides information, listed alphabetically, on the following comorbidities:

- Sexually Transmitted Infections
- Tuberculosis
- Viral Hepatitis

### Sexually Transmitted Infection (STI) Detection and Treatment

The presence of an STI other than HIV is an indicator of risk for HIV infection because STIs and HIV are primarily transmitted in the same way (via sex). Perhaps more importantly, certain STIs, especially ulcerative STIs, such as syphilis and herpes, may increase a person's biological risk for acquiring or transmitting HIV for several reasons, including that ulcers may serve as a point of exit or entry for HIV. STI screening and treatment offer key opportunities for integrating HIV prevention activities because those at risk for STIs may also be at risk for HIV. Overall, greater integration of HIV and STI detection and treatment services is needed. When delivering HIV prevention interventions, STIs should also be discussed and appropriate tests offered and provided, and vice versa for those not already known to be HIV-positive.

Testing and treatment of STIs can be an effective tool in preventing the spread of HIV. An understanding of the relationship between STIs and HIV infection can help in the development of effective HIV prevention programs for persons who engage in high-risk sexual behaviors. In 2007, CDC released the Program Collaboration and Service Integration (PCSI) Initiative that emphasizes the integration of STIs and HIV (along with viral hepatitis and TB) and how combined screening and counseling by providers reflects and accomplishes that goal. The CDC fact sheet on STIs (revised on December 2007) indicates that "testing and treatment of STIs can be an effective tool in preventing the spread of HIV" (<http://www.cdc.gov/std/hiv>).

Specifically for San Francisco, the following issues should also be addressed:

- Gonorrhea is a driver of HIV (see pp. 121-123).
- STIs are cofactors for HIV infection (see pp. 132-135).
- There is a high rate of syphilis among gay men who are HIV positive (Phipps et al 2009).

A person seeking testing and possible treatment for an STI provides an ideal opportunity for HIV prevention education, HIV testing programs, linkages to risk-reduction services, and partner services for HIV and STIs. Exhibit 33 describes STI detection and treatment and how these activities may be used as HIV prevention methods.

PRIORITY POPULATION	Individuals at high risk for acquisition and/or transmission of HIV and STIs
GOAL	To integrate testing services for individuals who may be at risk for both HIV and other STIs due to sexual activities and to eliminate STIs that are drivers of the HIV epidemic in San Francisco.
DESCRIPTION	STI detection refers to evaluation, testing and treatment for STIs. In addition, on-site dispensation of medications, STI patient education, and partner notification and treatment services may be offered.
DURATION	30 to 45 minutes, if conducted as an individual intervention; the time can be reduced if integrated into other testing or medical services.
SETTING(S)	Private or public settings in medical offices, community-based organizations, and clinics.
STAFFING AND MINIMUM QUALIFICATIONS	Medical provider or health educator trained in risk assessment, STIs, and harm reduction. Nonclinical organizations need to have a phlebotomist available to provide venipuncture for some STI tests.
TOOLS AND GUIDANCE FOR IMPLEMENTATION	<p><b>TOOLS:</b></p> <ul style="list-style-type: none"><li>Printed health education/risk reduction information.</li><li>Prevention materials, such as safer sex supplies and sterile injection equipment.</li><li>Testing kit (depending on the STI) or phlebotomist to provide venipuncture.</li><li>Referrals to appropriate health and social services, HIV prevention, medical care, mental health, substance use, STI testing and treatment, and other support services.</li></ul> <p><b>GUIDANCE FOR IMPLEMENTATION:</b></p> <ul style="list-style-type: none"><li>Conduct an assessment to determine client's possible risk for STIs.</li><li>Draw blood and/or provide the client instructions for how to collect a specimen (if no blood draw).</li><li>Provide STI education and/or counseling on STIs and ways to prevent them.</li><li>Disclosure of results to the client, including counseling regarding what the results mean and the options and support available to the client.</li><li>Treatment (if available onsite) — provide the client with treatment for the STI and/or follow-up to ensure treatment has been completed. Depending upon test and testing venue, this can include distribution of partner packs (aka, Expedited partner therapy). A client is given medication to provide to sexual partners who were exposed to gonorrhea or chlamydia.</li><li>Linkage to medical care if client diagnosed with an STI (e.g., assistance in making a medical appointment, verification whether the appointment was kept and medical workup completed).</li><li>Partner services to ensure that the client is aware of the opportunity to inform sexual and/or syringe-sharing partners of possible exposure to HIV.</li></ul>
RESOURCES	<p><b>SFDPH STD PREVENTION AND CONTROL SERVICES:</b> <a href="http://www.sfcityclinic.org">http://www.sfcityclinic.org</a></p> <p><b>CDC STD DETECTION IN HIV PREVENTION:</b> <a href="http://www.cdc.gov/std/hiv">http://www.cdc.gov/std/hiv</a></p>

STRENGTHS

- Can serve as a bridge to HIV testing for high-risk individuals.
- May increase a person's perception of his or her HIV risk if he or she is found to have an STI.
- Reinforces risk reduction and health promotion behaviors for both STIs and HIV.
- Can encourage regular 3- to 6-month screening for STIs and HIV together, even without symptoms, in high-risk groups such as gay men and other MSM.
- Can be done in multiple locations.
- Can use new screening technologies.
- Can be effective at changing community STI rates when targeted appropriately, which could, in turn, influence HIV transmission rates.

LIMITATIONS

- Must be accompanied by HIV testing services to maximize effectiveness.
- Will not reach people who do not get regular STI screening, those who do not have access to regular medical care, and those who do not have symptoms and, therefore, might not seek screening (unless the intervention is mobile and reaches people where they are).

## Tuberculosis Detection and Treatment

Tuberculosis (TB) is caused by bacteria that are spread from person to person through the air when a person with active TB disease of the lungs or throat coughs, sneezes, speaks, or sings. People nearby may inhale TB bacteria and become infected.

In 2008, 118 (14.6 cases per 100,000) new cases of active TB were diagnosed in San Francisco. Over the last decade, TB incidence has declined by more than 50% due to intensive efforts to prevent infection and active disease among San Francisco residents (SFDPH, Tuberculosis Surveillance Report, 2008).

Tuberculosis is particularly dangerous for persons infected with HIV due to their weakened immune systems. Once infected with TB, those with HIV co-infection have a greater than 100 fold risk of developing active TB disease compared to those without HIV. TB treatment is more complex and potentially more toxic for those with HIV than for those without it because of interactions between the drugs used to treat the two diseases. Additionally, TB disseminated to organs other than the lungs and acquired rifamycin-drug resistance are more common among people with HIV than those without it. In San Francisco, 11% of TB cases (13 of the 118) were co-infected with HIV in 2008. Among those with HIV co-infection, 5 of the 13 were also homeless. HIV infection is strongly associated with homelessness among those with active TB disease in San Francisco (SFDPH, Tuberculosis Surveillance Report, 2008).

This high level of risk underscores the need for TB screening and preventive treatment programs for people with HIV and those at greatest risk for HIV infection. The CDC recommends that individuals infected with HIV should be tested for TB. In addition, individuals infected with TB should complete preventive therapy as soon as possible to prevent progression to active TB disease (CDC 2008a). The HPPC also encourages screening and treatment for sexual partners of PLWHA with active TB disease.

Everyone suspected to be infected with TB and placed on treatment is required by state law to be reported to the health department within one working day. Additional reporting requirements include discharge or transfer from any health or correctional facility and interruptions in treatment. Directly observed therapy and other adherence-promoting strategies should be used in all patients with HIV-related TB. Whenever possible, the care for HIV-related TB should be provided by or in consultation with experts in management of both TB and HIV. The care for persons with HIV-related TB should include close attention to the possibility of TB treatment failure, antiretroviral treatment failure, paradoxical reactions of TB (i.e., temporary worsening of signs or symptoms of TB), side effects of all drugs used, and drug toxicities.

In February 2003, the American Thoracic Society, the CDC, and the Infectious Diseases Society of America (IDSA) jointly released new guidelines for the treatment of TB. This information can be found on the CDC website at [www.cdc.gov/tb/topic/TBHIVcoinfection/default.htm](http://www.cdc.gov/tb/topic/TBHIVcoinfection/default.htm). Exhibit 34 describes tuberculosis detection and treatment and how these activities can be used as HIV prevention methods.

## EXHIBIT 34 Tuberculosis Detection and Treatment

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PRIORITY POPULATION	PLWHA at risk for exposure to TB, particularly HIV-positive individuals who are homeless, born in a TB-endemic country, or are recent contacts of a person known to have TB.
GOAL	To integrate testing and treatment services for PLWHA who may be at risk for TB.
DESCRIPTION	TB is a disease caused by a bacterium called <i>Mycobacterium tuberculosis</i> . The bacteria usually attack the lungs but TB bacteria can attack any part of the body such as the kidneys, spine, and brain. TB remains a serious threat, especially for HIV-infected persons. People infected with HIV are more likely than uninfected people to become sick with other infectious diseases and have TB disseminate to organs other than the lungs.
DURATION	Based on the level of intervention (e.g., screening only, diagnosis, and/or treatment), as well as stage of the disease (i.e., latent or active).
SETTING(S)	Detection and treatment can be implemented in both community and medical settings. Diagnosis of TB must be conducted by a medical provider.
STAFFING AND MINIMUM QUALIFICATIONS	Staffing and minimum qualifications are also determined by level of intervention. Organizations that wish to implement detection services must have staff who are certified to perform TB testing. For a skin test, a provider must be certified as a Tuberculin Skin Test (TST) technician, and, for blood draws, must be a certified phlebotomist. Diagnosis and treatment regimens must be provided by a medical provider. Directly observed therapy (DOT) is routinely provided by the San Francisco TB Control Program or can be implemented by trained health workers on-site in coordination with the TB Control Program.
TOOLS AND GUIDANCE FOR IMPLEMENTATION	Tools and guidance for implementation may differ by setting. Information about settings is provided on the SFDPH website. <b>TUBERCULOSIS SCREENING</b> <ul style="list-style-type: none"><li>• TB Screening in San Francisco</li><li>• TB Screening Guidelines for Drug-Treatment Programs in California</li><li>• TB Screening Procedures at Methadone Clinics in San Francisco</li><li>• TB Screening Procedures for Homeless Shelters in San Francisco</li></ul> <b>GUIDELINES FOR ASSESSMENTS AND TREATMENT</b> <ul style="list-style-type: none"><li>• TB Infection-Control Guidelines for Homeless Shelters, updated January, 2005</li><li>• Latent Tuberculosis Infection: A Guide for San Francisco Providers</li><li>• Treatment of Latent TB Infection – 2003</li><li>• Pediatric TB Risk-Factor-Assessment Questionnaire (PDF document)</li><li>• QuantiFERON-TB Gold Blood Test: Provider Information and Guidelines</li></ul>
RESOURCES	<b>SFDPH WEBSITE:</b> <a href="http://www.sfdph.org/dph/comupg/oservices/medSvs/TB/">www.sfdph.org/dph/comupg/oservices/medSvs/TB/</a> <b>CALIFORNIA DEPARTMENT OF PUBLIC HEALTH WEBSITE:</b> <a href="http://www.cdph.ca.gov/programs/tb">www.cdph.ca.gov/programs/tb</a> <b>CDC WEBSITE:</b> <a href="http://www.cdc.gov/tb/topic/TBHIVcoinfection/default.htm">www.cdc.gov/tb/topic/TBHIVcoinfection/default.htm</a>

exhibit continues next page

## STRENGTHS

- Raise awareness among healthcare workers about HIV-related TB and the need for a collaborative approach to the problem.
- The presence of comprehensive materials is an important step in ensuring community awareness about HIV, TB, the link between them, and the prevention, treatment, and care opportunities available.
- TB screening can also form the basis for identifying HIV-infected clients who show no evidence of active TB and would benefit from treatment with isoniazid for latent TB infection.
- Early identification of TB followed by prompt referral for diagnosis and treatment increases the chances of survival, improves quality of life, and reduces spread of TB in the community.
- DOT programs are designed to address issues of TB-related stigma in work and home environments.

## LIMITATIONS

- Cost-effectiveness research comparing home- and clinic-based DOT models are needed.
- Research is required to identify the characteristics of subpopulations and patients for whom DOT is particularly effective.
- Limited research on the sustainability and educational and cultural appropriateness of different DOT approaches with diverse populations.

## **Viral Hepatitis Detection, Vaccination and/or Treatment**

Hepatitis means “inflammation of the liver.” It may be caused by a variety of factors, including environmental toxins, certain medications, alcohol, or viruses. Each type of virus that causes hepatitis has a letter assigned to it. In the U.S., the most common types of viral hepatitis are hepatitis A (HAV), hepatitis B (HBV), and hepatitis C (HCV) — each caused by a different virus that is transmitted differently; the three types are only related in that they attack the liver and can cause liver disease. Of note, San Francisco has the highest rate of liver failure and liver cancer of all counties in the U.S., and the rate is expected to increase, mostly due to HBV and HCV infections (National Cancer Institute 2008). For more information on HBV and HCV, see Chapter 2: Community Assessment, pp. 60-147.

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### **HIV and Viral Hepatitis Co-infection**

HBV and HCV are common causes of morbidity and mortality among PLWHA. While HBV and HCV infection do not accelerate the progression of HIV in coinfecting individuals, viral hepatitis coinfection complicates HIV treatment and can lead to more accelerated liver damage than would occur in individuals who are infected only with HBV or HCV.

In the U.S., an estimated 10 percent of PLWHA are also infected with HBV. HIV-infected people are three to six times more likely to develop a chronic or long-term HBV infection because of their weakened immune systems than individuals without HIV. For those PLWHA who are also infected with HBV, treatment is possible and, in fact, some medications used to treat HIV are also used to treat HBV, as discussed in the following website: [http://www.hbvadvocate.org/FactSheets/HBV\\_HIV%20coinfection.pdf](http://www.hbvadvocate.org/FactSheets/HBV_HIV%20coinfection.pdf)

HCV is one of the most common coinfections with HIV, affecting a quarter of HIV-infected persons in the United States (CDC 2008). This may be higher in some settings, such as the Positive Health Program at San Francisco General Hospital, which has a 42% HIV/HCV coinfection rate (Personal communication, Brad Hare, January 27, 2009). Individuals coinfecting with HIV/HCV are prone to accelerated liver damage due to immunosuppression and because many HIV medications are toxic to the liver (CDC 2008).

While the need for HBV and HCV testing of MSM living with HIV and the need for HBV testing of all MSM are well established, there is debate related to testing HIV-negative MSM for HCV. Sex as a mode of HCV transmission is now generally accepted in the medical community (Terrault 2002). The rate at which this occurs and factors related to sexual acquisition are not clear, but it appears that this transmission route is relatively rare.

Viral hepatitis vaccination, testing and treatment programs can be effectively integrated into “STI treatment facilities, HIV counseling and testing facilities, correctional facilities, drug treatment facilities, and other public health settings where STI and HIV prevention and control services are available” (<http://www.cdc.gov/hepatitis/HCV.htm>).

### **Hepatitis A**

Hepatitis A is an acute liver disease caused by HAV. It is spread through the ingestion of fecal matter, either through contaminated food or water or through sexual activities such as rimming. HAV infection may last weeks to months and can be temporarily debilitating, though it is rarely fatal. In 2007, 27 cases of HAV were reported to SFDPH (SFDPH 2008d). The SFDPH, the Gay and Lesbian Medical Association, and the CDC recommend HAV vaccinations for gay men and MSM because they are at increased risk for the infection. In San Francisco MSM carry a disproportionate burden of disease for HAV.

### **Detection of HAV Infection**

HAV antibody testing is only recommended for diagnosing acute disease.

### **Vaccination for HAV**

There is a vaccine to prevent HAV infection. The vaccine course is two shots given six months apart. The first dose is highly effective in itself, and can be administered to transients who may not return for the second dose. The HAV vaccine also comes in a combination form with HBV vaccine. This is given as three shots over a period of six months.

SFDPH's Communicable Disease Control & Prevention Section launched the StopHep program. The program provides HAV vaccine to local public health centers and private, non-profit organizations at no charge. In exchange the receiving organizations agree to administer the vaccine at minimal cost to patients at accessible locations and in order of risk priority. For more information, visit <http://www.StopHep.com>. In addition, several local clinics participate in the State Adult Hepatitis Vaccine Program, which provides free hepatitis A and B vaccines for administration in settings serving at-risk adults. For more information, visit <http://www.cdpb.ca.gov/programs/immunize/Pages/AHVP.aspx>.

### **Priority populations for HAV vaccine include the following:**

- MSM;
- Users of injection and non-injection drugs;
- PLWHA or people infected with HCV, chronically infected with HBV, or with chronic liver disease; and
- Persons with clotting-factor disorders.

### **Treatment for HAV**

For HAV, no medication is available. However, supportive treatment can address symptoms.

### **Hepatitis B**

Hepatitis B virus (HBV) is spread through blood-to-blood contact (such as sharing of injection equipment), via vertical transmission (from mother to child during birth), and through sexual activity (such as unprotected vaginal or anal sex). It can cause acute or chronic liver disease and can be fatal. Most adults with acute HBV infection clear the virus on their own and do not develop chronic HBV infection. However, 5% of adults with acute HBV develop chronic liver disease.

In 2007, 10 cases of acute HBV infection were reported to SFDPH (2007 Communicable Disease Annual Report, 2008). The SFDPH, the Gay and Lesbian Medical Association, and the CDC recommend vaccination against HBV for MSM because they are at increased risk for infection. In San Francisco MSM carry a disproportionate burden of HBV disease. In addition, Asian Americans, Native Hawaiians, and Pacific Islanders have higher HBV infection rates compared with other groups.

### **Detection of HBV Infection**

Integrating HIV and viral hepatitis testing services can increase disease screening rates among IDUs (Stopka et al 2007) and among other individuals who may be at risk for viral hepatitis, such as MSM. A combination of tests for HBV surface antigen, core antibody, and surface antibody is recommended for certain individuals, including Asian Americans, Native Hawaiians, and Pacific Islanders and others from countries where HBV prevalence is at least 2%, MSM, IDUs, HIV-infected persons, and pregnant women to diagnose past or present HBV infection. Interpreting HBV serology can be difficult and requires consultation of testing guidelines. For people who test HBV-surface-antigen positive, referrals to follow-up testing and care are needed. For people who test surface-antibody negative and who are not chronically infected, referrals to vaccination are needed. For people who are immune, no follow-up is needed.

### **Vaccination for HBV**

A vaccine exists to prevent HBV infection. It is usually given as a course of three shots provided over a six-month period. The HBV vaccine also comes in a combination form with HAV vaccine, which is administered over the same period as HBV vaccine alone. For more information on HBV vaccination, visit San Francisco Hep B Free at <http://www.sfhepbfree.org>.

### **Treatment of HBV Infection**

For HBV, no medication is available to address acute infection, but chronic infection may be treated with antiviral medications. Access to viral hepatitis treatment may be challenging. Not everyone is appropriate for HBV treatment regimens, antivirals are expensive, and access to specialty care (e.g., hepatologists) may be limited.

## Hepatitis C

Hepatitis C virus (HCV) is the most common chronic bloodborne infection in the U.S. (CDC, 2008). HCV is transmitted easily through blood-to-blood contact, especially the sharing of syringes, cookers, and other supplies used for injection drug use. The virus causes chronic infection in 75 – 85% of those infected. Approximately 15% – 25% of persons clear the virus from their bodies without treatment and do not develop chronic infection. HCV infection is the most common cause for liver transplant in the U.S. Based on national estimates, 3.2 million individuals are chronically infected with HCV, 475,000 of whom reside in California (California Department of Health Care Services 2001).

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In California, HCV-related mortality rates doubled between 1995 and 2004; in San Francisco, mortality rates were 60% higher than the state average during that time, rising from 2.30 deaths per 100,000 in 1995 to 5.37 deaths per 100,000 in 2004 (Wise 2008).

Individuals who inject drugs are the group most influenced by HCV. An estimated 91% of all 18,000 IDUs (Tseng et al 2007) and 45% of IDUs under 30 years of age in San Francisco have been infected with HCV at some point in their lives (Hahn et al 2001).

### Detection of HCV Infection

Testing for HCV antibodies is recommended for all current and former IDUs, PLWHA, and others who may be at risk for HCV acquisition. Integrating HIV and HCV testing services can increase disease screening rates among IDUs (Stopka et al 2007). For those who test HCV-antibody positive, further testing for HCV RNA is required to confirm current infection.

### Vaccination for HCV

No vaccine exists to prevent HCV infection. For this reason, integrated HIV and HCV prevention education, counseling, and testing are essential to address the HCV epidemic in San Francisco.

### Treatment of HCV Infection

Effective treatment exists for chronic HCV. Not everyone needs treatment, and treatment is not appropriate or effective for everyone. Access to HCV treatment may be challenging: access to specialty care (e.g., hepatologists) may be limited for people who are uninsured, treatment costs are high, and treatment side effects are difficult to manage. Although IDUs represent the majority of incident and prevalent cases of HCV, most lack access to treatment (Sylvestre 2005). This presents a significant challenge to successfully linking HCV-infected individuals to medical care. Despite the treatment challenge, when a person seeks testing for HCV, it is an ideal opportunity to provide viral hepatitis and HIV prevention education, HIV testing, linkage to risk reduction services, and psychosocial support services. Additionally, HCV testing provides an opportunity for education regarding liver care and referrals to drug and alcohol treatment, including harm reduction services. For more information on the link between HCV and HIV, see the section on Cofactors in Chapter 2, (p. 133).

Sexual transmission of HCV is documented in HIV positive MSM in the context of multiple partners (Bollepalli et al 2007), group sex, fisting, and unprotected anal intercourse (Danta, 2007, Rauch et al 2005, Ghosn et al 2006), and concurrent STIs such as syphilis and gonorrhea (Ghosn et al 2004). However, studies addressing sexual transmission in HIV- negative MSM are lacking, and research addressing sexual transmission in other populations is conflicting (Clark & Kulasegaram 2006).<sup>1</sup>

Exhibit 35 describes HCV detection and treatment and how these activities can be used as HIV prevention methods.

## EXHIBIT 35 Hepatitis C Detection and Treatment

PRIORITY POPULATION	Individuals at risk for both HIV and HCV due to sexual activity, sharing injection equipment, or other activities that may lead to blood-to-blood contact.
GOAL	To integrate testing and treatment services for individuals who may be at risk for HIV and HCV due to sexual activity, sharing injection equipment, or other activities that lead to blood-to-blood contact.
DESCRIPTION	HCV can cause acute or chronic liver disease, but is primarily a chronic condition that can create lasting morbidity and mortality.
DURATION	For testing, 45–60 minutes if conducted as an individual intervention. Time can be reduced if integrated into other testing or medical services. Treatment duration depends on the level of intervention required, but may require ongoing monitoring and disease management.
SETTING(S)	Private settings in community-based organizations and clinics accessible to the priority population.
STAFFING AND MINIMUM QUALIFICATIONS	<ul style="list-style-type: none"><li>For test counseling, a medical provider or health educator who is trained in risk assessments, HCV, and harm reduction. In settings providing HIV counseling, testing, and linkages, the test counselor must be certified by the State of California.</li><li>If providing HCV testing and test kits using blood samples from client-administered finger sticks are not available, non-medical settings will need a phlebotomist to provide venipuncture.</li><li>Further testing and treatment requires a medical provider and, in some cases, specialty care from a hepatologist and/or other specialists.</li></ul>
TOOLS AND GUIDANCE FOR IMPLEMENTATION	<p><b>TOOLS:</b></p> <ul style="list-style-type: none"><li>Printed health education/risk reduction information.</li><li>Prevention materials, such as safer sex supplies and sterile syringes and other injection equipment.</li><li>Testing kit or testing materials.</li><li>Referrals to appropriate health and social services, HIV prevention, medical care, mental health, substance use, and STI testing and treatment, and other support services.</li><li>Medical care clinic and/or hospital required for further testing and treatment.</li></ul> <p><b>GUIDANCE FOR IMPLEMENTATION:</b></p> <ul style="list-style-type: none"><li>Conduct assessment to determine client's possible risk for HCV.</li><li>Conduct test by drawing blood or provide the client with a test kit and instructions for using the kit.</li><li>Provide HCV education and/or counseling and information on transmission and prevention.</li><li>Disclose results to client, explaining what the result means and provide information about what options and support are available.</li><li>Provide linkage to further testing if HCV-antibody positive (e.g., assistance in making a medical appointment, verification whether the appointment was kept and further testing completed).</li><li>For further testing and treatment, link individuals to medical care and/or liver clinic.</li></ul>

CDC'S VIRAL HEPATITIS INFORMATION:  
<http://www.cdc.gov/hepatitis/ChooseC.htm>

HCV ADVOCATE:  
<http://www.hcvadvocate.org/>

SFDPH CHRONIC HEPATITIS REGISTRY:  
<http://www.sfcdp.com/chronichepregistry.html>

## STRENGTHS

- Can serve as a bridge to HIV testing services for IDUs and other high-risk individuals.
- May increase a person's perception of their HIV risk if they are found to have HCV.
- Can be done in mobile settings.
- Can use new screening technologies, as they emerge (e.g., rapid oral HCV-antibody testing).
- Treatment can stop or slow viral replication and, in some cases, eliminate infection.

## LIMITATIONS

- Must be accompanied by HIV testing services to maximize effectiveness.
- Further HCV testing and treatment may be difficult to access for those who test HCV-antibody positive and some individuals with HCV may not be eligible for treatment.

## Definition

# Tool Box #3

## STRUCTURAL INTERVENTIONS

### Introduction

This section aims to provide the reader with key components and steps that they will need to consider if they wish to develop and implement a structural intervention. This tool box is intended to complement the Structural Changes section of this chapter (pp. 195-197).

### How is “structural intervention” different from “structural change?”

Structural change was defined by the HPPC (in 2006), as new or modified programs, practices, or policies that are logically linkable to HIV transmission and acquisition and can be sustained over time, even when the key actors are no longer involved.

The concept is that one identifies a problem or need for which a structural change could be implemented to alter the environment and achieve a desired outcome. For example, the community might identify an outcome of “increasing safer sex practices in sex clubs.” Organizations may have different ideas about how to achieve the desired outcome. That is why the HPPC defined “structural interventions” as the “process” used to achieve the “change.” Some communities, such as San Francisco, have closed sex clubs, some have altered the lighting in the space, some have taken the doors off the rooms, and some require staff to monitor the space. In Los Angeles County, regulations have been passed banning unprotected sex in all county commercial sex venues (such as bathhouses and sex clubs) and requiring them to pay \$1,088 in annual licensing fees and undergo quarterly health inspections. The county requires the venues to display signs and posters stating that unprotected sex is prohibited, and they must provide free condoms, lubricant, and information on HIV prevention and safer sex. The law also requires commercial sex venues to offer 20 hours a week of HIV testing and counseling at their own expense.

## Barriers to Implementing Structural Interventions

Because structural interventions often involve advocacy, they can be difficult or impossible to fund with government money. However, providers engage in advocacy around social and policy issues on a daily basis, even if it is not part of a specifically funded intervention. The goal is to coordinate these efforts in San Francisco and to develop common targets for social and policy issues to maximize impact.

### EXHIBIT 36 Structural Interventions

<b>DESCRIPTION</b>	Actions that modify the social, economic, and political structures and systems in which we live. These interventions may affect technology, legislation, media, healthcare, and the marketplace. Rather than attempting to change individual behaviors, structural interventions aim to alter the physical, social, and legal environments in which we live, work, play, and/or take risks to help reduce HIV transmission. Structural interventions also include methods to reduce or abolish income inequality, racism, bigotry, phobias, and other inequalities and oppressions that create vulnerability to HIV/AIDS.
<b>GUIDANCE FOR IMPLEMENTATION</b>	An agency considering a structural intervention should consider the following: <ul style="list-style-type: none"><li>• Feasibility</li><li>• Impact</li><li>• Acceptability</li><li>• Sustainability</li><li>• Unintended consequences</li><li>• Scope of effort</li><li>• Alignment with mission and values</li><li>• Agency capacity</li><li>• Research support</li><li>• Timing</li></ul>
<b>RESOURCES</b>	<p>UCSF CENTER FOR AIDS PREVENTION STUDIES, FACT SHEET <a href="http://www.caps.ucsf.edu/pubs/FS/structural.php">http://www.caps.ucsf.edu/pubs/FS/structural.php</a></p> <p>STRUCTURAL INTERVENTIONS, HIV PREVENTION AND PUBLIC HEALTH: Descriptive summary of selected literature <a href="http://www.effectiveinterventions.org/files/structuralinterventions.pdf">http://www.effectiveinterventions.org/files/structuralinterventions.pdf</a></p>
<b>STRENGTHS</b>	<ul style="list-style-type: none"><li>• Take activities beyond individual behavior change.</li><li>• Aim to create sustainable changes that reach a broad audience.</li><li>• Address problems experienced repeatedly by multiple clients.</li><li>• Do not rely on public funding.</li></ul>
<b>LIMITATIONS</b>	<ul style="list-style-type: none"><li>• Processes often involve advocacy, so they can be difficult or impossible to fund with government money.</li><li>• Potential for negative, unintended consequences and stigmatization of priority populations.</li><li>• Time consuming and requires a lot of resources.</li><li>• Can be difficult to explain.</li></ul>

## Structural Interventions – a Closer Look

I. What are some key concepts and steps in considering structural intervention development for organizations? Why would an organization choose to implement structural interventions?

## 1. The need for a more complete and varied response to HIV

Most HIV prevention efforts have focused on behavior change. These efforts, while important, are insufficient. There are limits to the scale of nonstructural interventions (e.g., how many people can be reached). There is also a need to tackle larger contextual factors that can increase risk for HIV transmission.

## 2. Economic realities

Individual, group, and community-level interventions can be costly in terms of staff time and have limited reach (Blankenship et al 1983). Given limited financial resources, individual interventions alone cannot undo the structural factors that currently drive the epidemic.

Even if budgets for HIV prevention were to remain stable, there is currently not enough money to provide individual services for everyone who needs them. Ideally, structural interventions should rely as little as possible on support from the public health sector's scarce and diminishing resources (Wohlfeiler 2007).

### 3. Sustainability

Few studies estimate the impact of individual, group, and community-level interventions beyond a relatively short period of time (Wohlfeiler 2007). A goal of structural interventions is to create a systemic shift that will so a change can be sustained over time, as opposed to creating a time-limited, funding-based program.

For example, the financial burden of free condom distribution has been borne by public health agencies. If legislation were passed requiring all establishments with liquor licenses to provide them to their patrons, these programs would be sustained, independent of public health funding.

#### 4. Priorities for the SFDPH

The SFDPH welcomes structural interventions as a means to reduce HIV transmission

## 5. Success in other areas of public health

Structural interventions have a long history in other areas of public health, such as violence, tobacco control, and alcohol consumption (Wohlfelder n.d.). Some other examples are as follows:

II. Below is an example case that helps clarify what a structural intervention is and is not. While many structural interventions involve influencing policy change, others do not. Note that there are many levels at which a structural intervention can occur, some of which involve policymaking bodies, and others that do not.

### Case Example:

To illustrate the distinction between structural- and community-level interventions, the causal pathway in Figure 1 represents a common scenario: intoxicated patrons leaving bars with lowered inhibitions, placing them at increased risk of HIV infection.

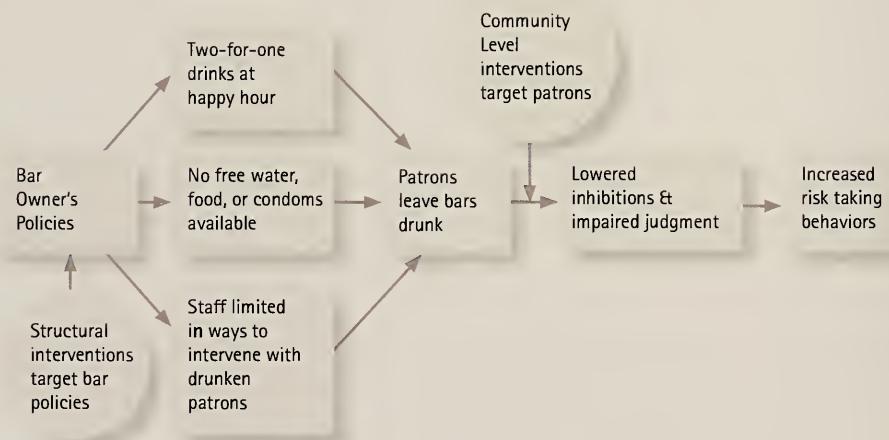
#### Issue Identified:

Addressing the issue of intoxication and how it impacts HIV risk behaviors.

#### Outcome Desired:

Provide access to free water and availability of food.

FIGURE 1 Causal pathway illustrating the difference between structural and community-level interventions to create behavior change.



#### Example of a Community-Level Intervention:

One point of intervention appears in the circle at the top. Outreach workers themselves outside of the club, handing out water, food and condoms to intoxicated patrons as they leave. While this may help sober the individual, make sure they have protection in their pocket and serve as a gentle reminder about HIV, it is dependent on the health worker being there to implement the effort.

#### Example of a Structural Approach:

An example of a structural intervention would be to facilitate a process where a health worker targets bar owners to change their internal policies to better safeguard their patrons. The circle at the bottom of the chart shows that by working with bar owners, it could be possible to change the following: the rules about happy hour, the provision of free water, access to food and/or condoms, and how bartenders and bouncers can limit the amount that patrons drink or offer remedies to those who appear impaired. The goal is to try to achieve the same outcome with the patrons, but not require health workers to conduct the activities.

Intervening with bar owners is only one possible route for structural intervention in this scenario. Alternatives might include working with the other systems involved, like the Alcohol Control Board or law enforcement. Another option would be to work with the Board of Supervi-

sors to obtain special permits for late-night food carts to be stationed outside bars and clubs, turning the idea borne from public health over to the private sector. These solutions would be sustainable and independent of ongoing public-health funding.

### III. Here are some key concepts to consider about whether a structural intervention may be appropriate:

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- Is the change that is needed wider than individual behavioral change? For example, does it address access, availability, or acceptability? These are factors that are not focused on individual behavior change, but on changing systems. For example, creating access to treatment for substance users (treatment on demand) would address accessibility of services in a way that could reduce the impact of substance use on HIV transmission for many individuals.

Structural interventions are those that are not focused on individual behavior change, but on changing systems. For example, creating access to treatment for substance users (treatment on demand) would address accessibility of services in a way that could reduce the impact of substance use on HIV transmission for many individuals.

- Are there many clients who have the same problem? Is there a solution that might work for all of them?
- Are there many clients who get help and then return some time later with the same problem or a new problem? Perhaps a client has been treated for substance use, but lack of employment is the underlying issue. Job training programs or creation of new jobs may address a systemic problem that would in turn reduce substance use.

### IV. Make sure there is an understanding of how structural factors affect HIV transmission before trying to address them.

## Mapping the Influence of Structural Factors

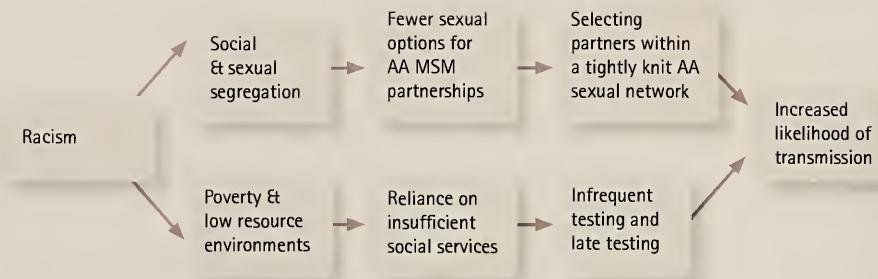
*Causal pathways* is a term used to describe the ways in which structural factors trickle through various domains to lead to increased likelihood of HIV transmission or some other specific issue. In HIV prevention, an understanding of causal pathways can reveal how structural factors and risk of HIV transmission are linked (Gupta et al 2008).

Figure 2 gives an example of a causal pathway, namely, the effects of racism on the HIV epidemic within the African American MSM community (AA MSM). It explains, in part, how there has been disproportionately high background prevalence in this population, a reason for the high incidence rates within the AA MSM community today.

The figure shows how racism can be traced through two causal pathways to explain the high likelihood of HIV/STI transmission among AA MSM in San Francisco. In the causal pathway at the top, racism most likely accounts for why, in a recent study of MSM partner preference in San Francisco, AA MSM were found to generally be the least preferred sexual partners among Asians, whites, and Latinos, (Fisher n.d.). The net effect of the social and sexual segregation is having fewer sexual options in the partner-selection process, which may contribute to why African American MSM are four times more likely to partner with other African American MSM, thus forming an more isolated sexual networks with high background prevalence.

The causal pathway at the bottom of Figure 2 traces how economic and environmental factors can lead to increased likelihood of exposure in San Francisco. Nearly two-thirds of positive testers during 2006-07 were from a few under-resourced areas of the City (SFDPH n.d.). AA MSM experience social marginalization due in part to the absence of culturally specific social spaces and social services (African American Workgroup 2008) and are tested less frequently, or later in their HIV infection, than other MSM (Millett et al 2008).

FIGURE 2 Multiple causal pathways can be linked to increased likelihood of HIV transmission



#### V. Make sure to plan for evaluation of the intervention.

Think about the change that you are trying to effect. How can you measure whether the intervention has had the intended impact? For example, if the goal is to increase treatment slots for substance users, one could measure the number of slots available before the intervention and compare it to the number of slots after the intervention. Additionally, one could compare the need for slots by assessing the length of a waiting list at various treatment centers in the city before and after the intervention.

# Summary of California Laws and Regulations for HIV Testing

## APPENDIX 1

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ELEMENTS	SUMMARY OF LAWS AND/OR REGULATIONS*
CONSENT	<p>Consent is regulated by several statutes under California law and differs among testing approaches. Because no identifying information is permitted for anonymous testing, Health and Safety Code Sections 120885 –120895 require that consent for anonymous testing be provided verbally. For confidential testing in nonmedical settings, Health and Safety Code (HSC) Section 120990 requires written consent for HIV testing.</p> <p>However, HSC Section 120990 permits medical providers who have a signed general consent for medical services to inform the client that a test is planned and that they have a right to decline. The information that the test is planned may be given verbally or in writing.</p> <p>It is important to note that all HSCs (120885-120895 and 120990) require that authorization be given voluntarily and with full consent by the client. In order to ensure that the client understands what he or she are consenting to, a provider must provide the client with information about the HIV antibody test and about the validity and accuracy of the test before it is performed, inform the client that there are numerous treatment options available for a patient who tests positive for HIV and that a person who tests negative for HIV should continue to be routinely tested, and advise the patient that he or she has the right to decline the test.</p>
DOCUMENTATION	<p>Client-level testing data, counseling data, and clients' records and results are protected under HSC 121025(a). The code indicates that all public health records relating to HIV or AIDS containing personally identifying information developed or acquired by state or local public health agencies or an agent of such an agency shall be confidential and shall not be disclosed, except as otherwise provided by law for public-health purposes or pursuant to a written authorization by the person who is the subject of the record or by his or her guardian or conservator.</p> <p>It is important to note that the law does not just apply to HIV-testing information, but to all required and supplemental elements.</p>
HIV RAPID ANTIBODY TEST	<p>HSC 120917 authorizes The California Department of Health Services (CDHS) to designate HIV counseling and testing sites with an HIV counselor who is trained by CDHS/OA to, under identified conditions, perform any HIV test that is classified as waived under the federal Clinical Laboratory Improvement Amendments (CLIA). Under this program, CDHS may perform and report clinical test results using a rapid HIV test for diagnosis. A second, approved test shall be used to confirm initially reactive test results. All rapid tests shall be confirmed using technology approved by the FDA.</p> <p>HSC 120917 enables HIV counselors who have successfully completed HIV counselor training to advance to limited phlebotomy technician (LPT) training. These counselors may substitute a General Education Development or high school diploma for their successful completion of the HIV counselor curriculum, and may perform any HIV test using oral-testing technology waived under CLIA. However, these counselors shall not perform any test using whole blood unless they meet the statutory and regulatory requirements for performing that test. HSC Section 120917 also mandates that CDHS/OA consult with the CDHS Laboratory Science Division to develop a comprehensive curriculum for HIV counselor training that meets the LPT-training requirements.</p>

## ELEMENTS

## SUMMARY OF LAWS AND/OR REGULATIONS\*

**DISCLOSURE OF HIV TEST RESULTS**

Disclosure of HIV results is regulated by several statutes under California law and differs according to the testing approach used. Under the law, disclosure of results is regulated not only in how they are delivered to the client, but how the information can be shared to provide additional services and repercussions if the information is improperly disclosed.

**DISCLOSURE OF RESULTS TO CLIENTS:**

Because no identifying information is permitted for anonymous testing, HSCs 120885 –120895 require that disclosure of results be provided in person (face-to-face).

In order to protect client confidentiality, HSC 120895 specifically prohibits the electronic delivery of clinical laboratory test results or any other related results for HIV antibody tests to clients regardless of their authorization.

**DISCLOSURE OF RESULTS FOR PUBLIC-HEALTH PURPOSES:**

HSC 121015 permits but does not require, a physician and surgeon to disclose to a person reasonably believed to be a sexual partner or a person with whom the patient has shared the use of hypodermic needles, or to the local health officer, that the patient has tested positive on a test to detect HIV infection, except that no physician or surgeon shall disclose any identifying information about the individual believed to be infected, except as required in Section 121022. No physician or surgeon shall disclose the information unless he or she has first discussed the test results with the patient and has offered the patient appropriate educational and psychological counseling that shall include information on the risks of transmitting HIV to other people and methods of avoiding those risks and has attempted to obtain the patient's voluntary consent for notification of his or her contacts. The physician or surgeon shall notify the patient of his or her intent to notify the patient's contacts prior to any notification. When the information is disclosed to a person reasonably believed to be a spouse, or to a person reasonably believed to be a sexual partner, or a person with whom the patient has shared the use of hypodermic needles, the physician or surgeon shall refer that person for appropriate care, counseling, and follow-up. This section shall not apply to disclosures made other than for the purpose of diagnosis, care, and treatment of persons notified pursuant to this section, or for the purpose of interrupting the chain of transmission.

HSC 121022 requires healthcare providers and laboratories to report cases of HIV infection to the local health officer using patient names.

HSC 121025(b) allows public health agencies, or an agent of such an agency, to disclose personally identifying information in public-health records to other public-health agencies (local, state, or federal), or to supporting medical researchers, when that information is necessary to carry out the duties of the agency or researcher in the investigation, control, or surveillance of disease.

**DISCLOSURE OF RESULTS FOR MEDICAL PURPOSES:**

Inclusion of a person's HIV test result in his or her medical record is not considered a disclosure under HSC 120980. A client may provide written authorization to disclose test results by a person responsible for their care and treatment. Written authorization is required for each separate disclosure of the test results, and must include to whom the disclosure would be made.

HSC 120985 permits a physician who orders an HIV test to record the results in the patient's medical record, or otherwise disclose it without written authorization to the patient's health care providers for the purpose of diagnosis, care, or treatment of that patient.

**UNAUTHORIZED DISCLOSURE:**

HSC 121025(d) states that no confidential public health record may be required to be disclosed in the context of any civil, criminal, or administrative proceeding.

Further, HSC 121022(e) requires state and local health department employees and contractors to sign a confidentiality agreement that includes penalties for a breach of confidentiality and procedures for reporting a breach of confidentiality prior to accessing confidential HIV-related public-health records. HSC 121025(e) and 120980 increased civil penalties for unauthorized disclosure and for any person who negligently discloses or willfully or maliciously discloses the content of any confidential public health records.

**TRAINING OF TEST COUNSELORS** HSC 120871 relates to the training of HIV counselors. This statute requires the CDHS to authorize the establishment of training programs for counselors for publicly funded HIV testing programs and by specified nonprofit community-based organizations. Participating organizations are required to follow curriculum content and design for these trainings that are approved by CDHS.

**HEPATITIS C TESTING** In order to protect clients' confidentiality, HSC 120895 specifically prohibits the electronic delivery of clinical laboratory test results or any other related results for the presence of antigens indicating a hepatitis C infection, regardless of authorization.

**SEXUALLY TRANSMITTED DISEASE (STI) TESTING** Unlike for HIV, California has strict Health and Safety Codes that authorize the department of health to prevent and control venereal diseases. Under HSC 120500, "venereal diseases" means syphilis, gonorrhea, chancroid, lymphopathia venereum, granuloma inguinale, and chlamydia. Some highlights of the regulations are provided below, but organizations requesting resources or support to conduct STI testing should become thoroughly familiar with HSC 120500 –120605.

**TREATMENT:**

HSCs 120565 and 120570 require the agency that administers STI treatment make reasonable efforts to determine whether the person has complied with his or her STI treatment and make all reasonable efforts to persuade the person to comply if not. If it thereafter appears reasonably likely that he or she has failed to comply, the provider must report the person's name and address to the CDHS.

HSC 120582 permits a treating physician who diagnoses a sexually transmitted chlamydia, gonorrhea, or other sexually transmitted infection, as determined by the department, in an individual patient to prescribe, dispense, furnish, or otherwise provide prescription antibiotic drugs to that patient's sexual partner or partners without examination of that patient's partner or partners.

**PARTNER SERVICES:**

HSCs 120555 requires local health officers to use every available means to ascertain the existence of cases of infectious venereal diseases within their respective jurisdictions, to investigate all cases that are not, or probably are not, subject to proper control measures approved by the board, to ascertain so far as possible all sources of infection, and to take all measures reasonably necessary to prevent the transmission of infection.

**PARTNER ELICITATION:**

HSCs 120555 requires individuals diagnosed with a venereal disease to provide the name and address of any person from whom the disease may have been contracted and to whom the disease may have been transmitted.

**HIV-PREVENTION EDUCATION** HSC 120846 was added to the Health and Safety Codes to permit publicly funded HIV testing sites to advise certain clients who have been tested before and are following appropriate risk reduction measures that they may not need any further education services, determine whether a person should be allowed to self-administer any data collection form required by the department certain and to provide prevention education using various methods.

# New Prevention Approaches in Development

## APPENDIX 2

A number of new, innovative prevention technologies are still in development. If any of these interventions are found to be effective, safe, and relevant to San Francisco, multiple issues will need to be addressed regarding their distribution, cost, and role in the broad spectrum of HIV-prevention efforts. Community planning will play a vital role in determining how to best meet these challenges. The goal of this appendix is to provide a very brief summary of some of the most important interventions currently under development and to provide further references for more detailed information.

### Vaccines

Finding a vaccine against HIV could bring an end to the epidemic or greatly decrease the burden of disease, as vaccines have done for smallpox, polio, and some other infectious diseases. At this time, there is promise of an effective HIV vaccine.

Vaccines generally work by training the body's immune system to fight off an infection before a person is actually exposed to the causative virus or bacterium. A preventive HIV vaccine would protect the vaccinee from becoming infected with HIV. There are also therapeutic vaccines that work by reducing the impact that a disease, once contracted, has on the body. A therapeutic vaccine for persons living with HIV/AIDS might help delay the need for antiretroviral therapy or bolster therapy for those with resistant disease. The NIH-sponsored HIV Vaccine Trials Network (HVTN) (<http://www.hvtn.org>) is testing candidates for both types of HIV vaccines. The search for an HIV vaccine began soon after HIV was identified, and continues around the world. Many different kinds of HIV vaccines have been formulated and tested, and here in San Francisco they are being tested by the HIV Research Section of the SFDPH (<http://www.helpfighthiv.org>) as a Clinical Trials Unit of the HVTN.

It is important to note that no HIV vaccine candidate contains HIV, live or attenuated; and most candidates contain small amounts of the RNA or protein of HIV – never enough to cause HIV infection.

### Testing Phases:

Vaccines are tested in phases, as follows:

**Phase 0** is carried out *in silico*, which is to say it tests a vaccine candidate's properties in the laboratory vessels, or in nonhuman animals. In the case of HIV vaccine candidates, the most important animals in which testing occurs are nonhuman primates, particularly monkeys, which are susceptible to Simian Immunodeficiency Viruses (abbreviated SIV); the major variety of HIV (HIV-1) was acquired by people eating the meat of chimpanzees infected with SIVcpz, the variety of SIV that infects chimpanzees. The other variety of HIV (HIV-2) was acquired by people eating the meat of sooty mangabeys, a variety of monkey that has its own variety of SIV known as SIVsm; HIV-2 is almost completely confined to West Africa.

**Phase I** is the first phase carried out in humans. It determines whether a vaccine candidate is safe and tolerable, possible side effects, and technical properties known as pharmacodynamics and pharmacokinetics. These studies are conducted with a small number of healthy individuals (typically 15 to 50) and last 12 – 18 months.

**Phase II** measures whether a vaccine candidate creates the desired immune response, determines appropriate dosing, and provides further information about safety. Phase II studies include 50 to 250 people (sometimes more), and can last anywhere from two to three years.

**Phase III (Efficacy Trials)** An efficacy trial tests whether a vaccine candidate works to either prevent infection or to help those who have become infected to better fight the infection. Efficacy trials enroll thousands to tens of thousands of participants who are at risk for a disease, and can last five to ten years. After an efficacy trial has been completed, investigators have a good picture of the vaccine's efficacy, safety, and its range of possible side effects.

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## **Microbicides**

Microbicides are gels, creams, films, or suppositories that might prevent the transmission of HIV (and possibly other STIs) when applied topically (e.g., in the vagina or rectum). At this time, there is no effective microbicide to prevent HIV, and trials of several products have failed to show any sign of protection. However, studies of multiple potential microbicides are in progress, mostly under the aegis of the NIH-funded Microbicides Trials Network (MTN), whose web site is <http://www.mtnstopshiv.org>.

Microbicides go through similar testing phases as those for vaccines.

## **Pre-Exposure Prophylaxis (PrEP) and Post-Exposure Prophylaxis (PEP)**

Pre-Exposure Prophylaxis (PrEP) involves HIV negative people taking HIV drugs to prevent HIV infection before they are exposed. Currently, it is not known whether this method can prevent HIV infection.

There are multiple studies of PrEP candidates currently under way around the world in different populations, such as men who have sex with men, heterosexual men and women, and injection-drug users. You can learn more about these studies at <http://www.prepwatch.org>. In San Francisco, the HIV Research Section of the SFDPH is currently conducting two PrEP studies, Project T and PREPARE. To learn more, go to <http://www.preparesf.org>.

### **PrEP and PEP**

PrEP is different from Post-Exposure Prophylaxis (PEP), which is currently available. Post-Exposure Prophylaxis involves the use of a short course (28 days) of one or two HIV drugs, begun within 72 hours of a potential HIV exposure. Though no definitive studies of PEP have been conducted, there is evidence from studies of healthcare workers who have been inadvertently exposed to HIV, mostly by needlesticks, that PEP may be partially effective in preventing HIV infection. The challenge of PEP, however, is that a person must accurately identify when they were potentially exposed to HIV, and must begin the treatment soon after that exposure as it is reasonably clear that PEP started more than 72 hours after exposure is ineffective. You can learn more about PEP at [http://sfhiv.org/basics\\_pep.php](http://sfhiv.org/basics_pep.php). Please see pp. 248-249 for more information about PEP.

## **Circumcision**

Several trials in Africa among heterosexuals have proved that circumcision reduces the risk of HIV infection in heterosexual men. Efforts are underway in Africa to increase circumcision rates among heterosexual men at highest risk for HIV. While several studies have suggested that uncircumcised MSM are at higher risk for HIV transmission compared with circumcised MSM, the role of circumcision in preventing HIV among MSM has yet to be determined. For more information about circumcision and HIV, go to <http://www.cdc.gov/hiv/resources/factsheets/circumcision.htm>, or [http://www.avac.org/pdf/factsheet\\_MC.pdf](http://www.avac.org/pdf/factsheet_MC.pdf).



# 5

## Evaluation



# Chapter 5

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# Introduction

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## PURPOSE OF CHAPTER

The purpose of this chapter is to provide an overview of San Francisco's approach to evaluation as it relates to outcomes, efforts and to author future outcomes. The chapter is intended to help all who are involved in HIV prevention—community, providers, the San Francisco Department of Public Health (DPH), researchers, and others—to understand the priorities of the HPPE over the role of evaluation in combatting HIV. The HPPE supports evaluation. Here is community, research, community-driven, collaborative, and decisive. The HPPE supports putting in place methods in focus program effectiveness that are useful, rigorous, and practical.

The HPPE envisions an evaluation approach that is meaningful to San Francisco, to be meaningful, evaluation must effectively document its successes and help to improve an programs to better meet the needs of our affected communities and eliminate new HIV infections.

## HOW TO READ THIS CHAPTER

Those interested in an overview of San Francisco's approach to HIV prevention evaluation should focus on Section I. Those interested in the specifics of San Francisco's evaluation model should also read Sections II and III. HIV prevention providers are invited to read the chapter in its entirety to understand how their current and future data collection and evaluation efforts fit into the overall picture of evaluation, but specific attention should be paid to Exhibit 9 on p. 299, which outlines evaluation priorities for HPS-funded programs. The appendices provide additional context, as well as resources for those wanting to design and implement evaluations.

## TERMS & DEFINITIONS

**CQI** Continuous Quality Improvement. An approach to quality management that emphasizes organizations and systems, with an emphasis on ongoing improvement and collaboration.

**CTL** Counseling, Testing, and Linkages

**HERR** Health Education/Risk Reduction

**IMPACT EVALUATION** Focuses on the broader, longer-term results of a program or set of programs. It reaches beyond immediate individual attitude and behavior change (outcome evaluation) to look at bigger picture changes.

**NEEDS/STRENGTHS ASSESSMENT** The process of regularly and systematically collecting, assembling, analyzing, and making available information on the health of a community and the health systems and social structures affecting it, including strengths as well as deficits.

**OUTCOME EVALUATION** Answers the question: "What changed?" It looks at the impacts, benefits, and/or changes among participants/clients or in the environment that happened during or after program implementation, and tries to establish whether the changes resulted from the program and/or other factors.

**PROCESS EVALUATION** Assesses the extent to which a program (or set of programs) was implemented as planned and identifies ways for improving program implementation. In short, process evaluation answers the questions: who, how many, what, why, and how.

**STOREE** San Francisco Tells Our Real Experience Through Evaluation, San Francisco's evaluation approach is called Project STOREE.

# HIV Prevention Evaluation in San Francisco

## SECTION I

A driver of a car is continuously making decisions, such as to go slower or faster based on personal or subjective perceptions of what is safe, required by law, or some, exciting. [F]rom time to time, even the most experienced driver needs to refer to the dashboard of the car to get evidence that complements her own perceptions. (PSI Research Division 2005).

### WHAT IS EVALUATION

Evaluation is like the dashboard of a car, providing objective information to complement our lived experience, so that we can make informed decisions. There are many different gauges on the dashboard that tell us a variety of things. For example, the speedometer tells us how fast we are going, the temperature gauge tells us how hot or cold the car engine is, and the oil light illuminates when the car needs oil. Likewise, in reflecting on HIV prevention efforts, a number of evaluation tools are used to gauge how things are going. For example, epidemiologic data can show whether new infections are increasing or decreasing, and outcome evaluation can show how HIV prevention programs affect individuals and communities.

#### Definition of HIV Prevention Evaluation

HIV prevention evaluation is a set of systematically planned and executed activities, which can include both quantitative and qualitative approaches, designed to assess one or more of the following: (1) what a program is doing, (2) who it is reaching, (3) whether it is working (and why or why not), and/or (4) how it could be improved.

Evaluation is often discussed in the context of program effectiveness. But what does that mean? For a program to be considered effective, it must contribute either directly or indirectly to the prevention of new HIV infections. While it is often unrealistic to expect that an individual program could measure a reduction in new HIV infections, programs should, whenever possible, adopt approaches that increase the chances of success, including: (1) using theory-based or evidence-based prevention models (The logic model is a program planning tool providers can use to develop an effective program. Tools for developing a logic model can be found in Appendix 3), (2) designing clear and measurable benchmarks or objectives (both process and outcome) that are logically linked to reducing new HIV infections, and (3) periodically assessing the program to see if it has met the benchmarks or objectives, and if not, adapting the program as necessary.

A program may be very successful at meeting its process objectives – in other words, all activities were done according to plan. However, this program would not be considered effective on that basis alone, because it has not shown a link to reducing new HIV infections. For example, this program may have met its objective of perfect attendance at a four-session workshop, but this indicates little about the effect of the workshop on HIV transmission; this program would also need to establish and achieve an objective related to behavior change, knowledge of HIV status, or other factors more closely linked to reducing new HIV infections.

Program evaluation is a serious inquiry into whether and how HIV prevention is achieving its goals. Even though it requires extensive time and resources, conducting program evaluation can be extremely meaningful and illuminating. The HPPC and the HIV prevention community in San Francisco highly value rigorous program evaluation because it documents and adds to the lived experience of providers and communities, honors our successes, supports us in acknowledging and owning our failures, and gives us a foundation for taking HIV prevention to the next level – reaching our ultimate HIV prevention goal of ending HIV.

## **History and Background**

Project STOREE was inspired by a series of events and decisions that occurred between 1997 and 2004, both in San Francisco as well as statewide and nationally. In summary, in the mid-1990s, the HPPC and HIV prevention providers began on a path to conducting effective process and outcome evaluation. The Centers for Disease Control and Prevention (CDC) and the State of California Office of AIDS later wanted to take evaluation in a different direction, with a focus on in-depth process evaluation. In our attempt to meet CDC and State needs, San Francisco discovered that evaluation was no longer meeting local needs as well as it could. By 2004, San Francisco had in many ways ceased to benefit from the data being collected, completely contrary to San Francisco's philosophy about evaluation and the HPPC's 1997 strategic plan.

Recognizing this dilemma, the HPPC formed an Evaluation Committee in 2004. This committee planted the seeds for Project STOREE with its strategic evaluation plan entitled "Changing the Culture of Evaluation in San Francisco HIV Prevention," which the HPPC adopted. This plan set the stage for a new approach to evaluation that was more in line with San Francisco's values, beliefs, and needs. The Plan's intent was "to change the culture of evaluation to reflect a dynamic informative process of information gathering where results are synthesized in order to see the overall picture of San Francisco's prevention efforts."

In 2006, the HPS launched Project STOREE, which represents a synthesis of the HPPC's 2004 Strategic Evaluation Plan and input from San Francisco's HIV prevention providers, researchers, and other stakeholders. Much of the content of this chapter was initially developed by the Project STOREE Working Group, a collaboration between HPS staff, representatives from HIV prevention providers, and the HPPC. This group considered the input of all stakeholders in developing the chapter (see Appendix I).

## Goals

The overall goals of Project STOREE, from the HPPC's 2004 Strategic Evaluation Plan, are provided below. Exhibit 1 shows the overarching HIV prevention evaluation questions for San Francisco and how answering them will help us achieve the goals.

**Goal 1. Gathering the stories.** Evaluation reflects how San Francisco HIV prevention efforts promote the mental, physical, emotional, and structural health and well-being of people in San Francisco.

**Goal 2. Creating information bridges.** Evaluation creates a bridge between the providers, participants/clients, planners, funders, and policy makers (collectively, stakeholders) of San Francisco HIV prevention programs to: 1) voice expertise and share experiences; 2) share results of HIV prevention efforts in San Francisco; and 3) improve programs.

**Goal 3. Using the stories to create change.** Evaluation creates the foundation for change in San Francisco HIV prevention efforts.

In order to create the change described in Goal 3, evaluation efforts should seek to answer the following overarching questions. The answers to these questions will help identify new directions for HIV prevention.

### EXHIBIT 1 Using Evaluation to Create Change



#### Overarching Evaluation Questions

- Are our HIV prevention efforts working to reduce new HIV infections?
- Are our HIV prevention efforts meeting client and community needs?
- How could we improve our efforts?

- a) **Gather the stories** that will help answer these questions
- b) **Create information bridges** to share the stories
- c) **Use the lessons learned to create change** and improve prevention

## Core Beliefs and Guiding Principles

### Core Beliefs

The HPPC holds the following core beliefs that form the rationale for Project STOREE:

- 1. Evaluation helps reduce the transmission of HIV by generating information that can be used to improve HIV prevention programs.** Evaluation is used to (1) determine whether individual HIV prevention programs are working; (2) improve the design and implementation of programs; (3) inform front-line workers and managers how to improve their work and how to better meet the needs of clients and communities; (4) ascertain which interventions reduce different risk behaviors in different populations; (5) identify gaps in services. These benefits of evaluation all facilitate the ultimate goal of eliminating the transmission of HIV in San Francisco.
- 2. Evaluation is critical for ensuring that prevention efforts meet the changing needs of affected groups.** Evaluation activities can (1) determine whether prevention programs are responding to consumer perceptions about current HIV-related issues; (2) demonstrate whether prevention efforts are keeping pace with the most up-to-date epidemiologic distribution of HIV infection and risk behaviors in the city; and (3) show whether new, creative, and innovative programs are effective in the context of current HIV epidemiology, leading to the establishment of new best practices for HIV prevention.

**3. Evaluation data can improve prevention planning and resource allocation.** Evaluation can help HIV prevention planners make informed decisions about the most effective and efficient use of scarce funding and technical assistance resources. Evaluation results (1) demonstrate whether individual programs are reaching their priority populations, meeting client needs, and are effective at reducing risk behaviors; (2) show which interventions work best in which populations; and (3) indicate trends in HIV infection and risk behavior over time at the citywide level.

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**4. Evaluation gives a voice to consumers of HIV prevention services.** Collecting information from those using services allows their perceptions and experiences to be heard by prevention providers, researchers, policy makers, and funders. Good evaluation (1) continually integrates the consumer voice into design, implementation, and analysis; and (2) considers consumer needs and perspectives when conducting evaluation research.

**5. Evaluation gives credibility to the local HIV prevention strategy.** Evaluation offers an important opportunity for the city to (1) define what is working from a local perspective; (2) showcase and promote its innovative community-based HIV prevention model using scientific methods designed to truly capture the essence of the local work; and (3) acknowledge and own our failures so that we can learn from them as part of a continuous improvement process.

**6. Evaluation is most effective and useful when it is driven by local stakeholder needs.** Because HIV and approaches to addressing it differ by locality, evaluation plans should be designed and implemented at the local level, with input from clients and communities, HIV prevention providers, the community planning group, local researchers, health department staff, and other local stakeholders. State and federal government evaluation mandates can create enormous data collection burdens for providers without generating data that is useful locally. Localities are in a better position to design evaluation efforts that highlight local successes and provide data that can be used to improve HIV prevention programs. Localities with similar epidemiologic profiles and services can then share evaluation best practices with each other.

## Guiding Principles

The HPPC supports the following principles to guide the implementation of Project STOREE:

- 1. Collect only data that will be used.** The HPS should not require the collection of any piece of data that will not be used to answer, directly or indirectly, one of the three overarching evaluation questions (Exhibit 1).
- 2. Incorporate a “feedback loop” into evaluation.** When data is analyzed or studies are conducted, the findings should be presented to stakeholders, including communities, providers, the HPPC, and the HPS. This honors the effort that was put into collecting the data, builds support for data collection because people can see the results, and opens up opportunities to discuss ways to improve HIV prevention.
- 3. Limit provider and client burden.** Program and service delivery should always be providers' primary focus, with evaluation and data collection playing a supportive role. However, in order to meet San Francisco's evaluation needs, as well as those of external stakeholders, there will always be some required data collection and evaluation. The goal is to keep the requirements limited to minimize the burden for providers and clients in terms of time and effort. This will ideally free providers to implement additional evaluation that is meaningful for them as needed and as capacity allows.
- 4. Provide options for data collection and reporting.** Just as with prevention programs, evaluation and data collection must be appropriate for the client and the setting. To this end, providers should have flexibility in how they collect and report data. For example, paper and pencil might be an appropriate data collection method in some settings, whereas personal digital assistants (PDAs) might work better in others. Providers also

need flexibility in how and when they collect data. For example, with some programs and interventions it might make the most sense for clients to complete written surveys, whereas with others it might be more appropriate for providers to ask clients the questions in an interview format.

- 5. Provide training and technical assistance (TA).** The HPS should not require any data collection, evaluation, or reporting without providing the appropriate training or TA. This training and TA should be available to support providers in meeting the minimum evaluation requirements, and ideally, it would also support providers to conduct expanded evaluation at their discretion. There are a number of free and low-cost resources to draw on for this (e.g., Center for AIDS Prevention Studies Technology & Information Exchange Core Program, CDC's Capacity Building Assistance program), in addition to resources that could be allocated toward training and TA efforts.
- 6. Usefulness of evaluation findings, scientific rigor, and practical considerations are all important and must be balanced.** In San Francisco, the data needs of the users (in this case, affected communities, the HPPC, the HPS, providers, CDC, etc.) are paramount – they drive the evaluation plan. Scientific rigor, while important, needs to be balanced with the practical aspects of addressing the HIV prevention needs of San Franciscans. Nevertheless, evaluation findings cannot be trusted unless the methodology and implementation are sound, so scientific rigor cannot be ignored. Ultimately, when appropriate evaluation methods are applied to ascertain the effectiveness of programs, we can learn what is working, how programs can be improved, and how we can hold ourselves accountable. Thus, the HPPC strongly supports putting in place methods to assess program effectiveness that are useful, rigorous, and practical.
- 7. The HPS and providers should dedicate money and staff for evaluation.** Evaluation costs money. All steps involved in evaluation should be accompanied by a cost assessment (including one-time and ongoing costs) and a plan for how it will be supported. Evaluation also requires staffing and leadership, including full- and part-time positions dedicated to evaluation.
- 8. HPS-funded providers should be compensated fairly for the costs of implementing evaluation requirements.** All too often evaluation is an unfunded mandate, despite the fact that evaluation always takes time and costs money. Providers should receive adequate reimbursement for fulfilling evaluation requirements, commensurate with the amount of staff time spent on evaluation activities and the amount spent on evaluation materials and supplies (e.g., computers, software). In difficult financial times, evaluation may seem the easiest thing to cut back on, but in fact it becomes even more critical, because the need to show that limited funds are being spent on programs that work is more pressing.
- 9. Qualitative data should be an integral part of the evaluation effort.** Qualitative data – data represented in words (not numbers) that explores meaning, context, and nuance – is often overlooked as a legitimate way to evaluate HIV prevention. Qualitative data is not the same as anecdotal data or isolated stories; rather, it is collected systematically and with a particular purpose. Provider experience shows that some of the most important prevention successes and failures can only be illuminated through qualitative approaches to evaluation. Qualitative data is the key link to explaining the "why and how" behind the numbers, and it can show the impact of prevention on people's lives in a way that quantitative data does not capture. San Francisco believes in a holistic approach to HIV prevention, thus we should implement a holistic approach to evaluation that includes qualitative data. Combining the numbers and the stories can paint a fuller picture and provide greater insight.
- 10. Evaluation is a collaborative effort.** There will always be evaluation and data collection requirements that providers must embrace as a condition of their funding. However, the development and implementation of an evaluation plan for the city and for individual providers is an ongoing collaborative effort, where input and feedback from key stakeholders are always included. Stakeholders include clients, community members, HIV

prevention providers, the HPS, CDC, the State Office of AIDS, TA and capacity building assistance providers, researchers, and many others. The goal is for all the stakeholders, especially the HPPC, the HPS and providers, to see each other as partners and resources in the evaluation effort, and to engage in the partnership because it is mutually beneficial.

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## Lessons Learned

As Project STOREE unfolds, we must take into account lessons from the past. The San Francisco HIV prevention community has developed a wealth of practical knowledge about evaluation that should be incorporated into future evaluation plans:

- **Community members, including HPPC, program participants, and the larger HIV community, are the primary stakeholders in evaluation.** Evaluation should be inclusive and responsive to community needs. Evaluation findings should be presented back to community stakeholders. Programs and program evaluators have a responsibility to ensure that evaluation findings are used to improve community programs. Ultimately, evaluation is conducted so that we can better serve communities and clients in our pursuit of reducing new HIV infections.
- **Evaluation in the real world may look very different than evaluation in an ideal world.** HIV risk is complex, and contextual factors can be difficult to measure. Defining culturally appropriate markers of effectiveness is challenging. Even coming up with a very general definition of what constitutes "success" that all stakeholders can agree to can sometimes feel like an impossible task. In short, in the real world, evaluation is not clean and simple.
- **Perfection is the enemy of good.** Programs never have enough time or money to do everything they want to do with regards to evaluation, but just because it can't be perfect isn't a reason to do nothing. Evaluation can be something very simple – see Appendix 2 at the end of this chapter for some suggestions.
- **There is a need to move beyond "bean counting."** Sometimes just collecting basic information on participants can take so much energy – between designing forms, training staff on how to collect the data, entering it, and checking it for quality – that programs are not able to get to the actual evaluation part, where data is analyzed and fed back into the program. This phenomenon can make data collection feel pointless and burdensome. Agencies and funders need to find ways to ensure that data gets analyzed and used. Some successful strategies that can be implemented include: (1) limiting the amount of data collected because then there is more time to analyze it, and a lot can be learned from a small amount of good-quality data, (2) integrate easy evaluation activities into the day-to-day work (see Appendix 2 for some suggestions), and (3) consider dedicating all or part of a staff position to evaluation (not just data collection).
- **Programs can reduce the need for outcome evaluation by replicating or adapting programs that have already been shown to be effective.** If a program has been shown to be effective, as long as it is implemented as intended, there is less need for outcome evaluation. The focus can then be placed on process evaluation, to ensure adherence to the program plan. CDC's Prevention Research Synthesis (PRS) Project (<http://www.cdc.gov/hiv/topics/research/prs/index.htm>) is one place to go to find such programs. Literature searches are another tool.
- **Logic models are a helpful tool for program planning and evaluation.** See chapter Appendix 3 for some resources on logic modeling.
- **Front-line staff are important stakeholders in evaluation.** Their expertise and buy-in is needed at all stages of evaluation. Without their participation, evaluation will not work.
- **New evaluation tools are needed to keep pace with new trends, such as the increased emphasis on structural approaches.** While methods for evaluating individual and group level behavioral interventions are well developed, tools and models for evaluating HIV prevention structural change initiatives are not and are sorely needed.

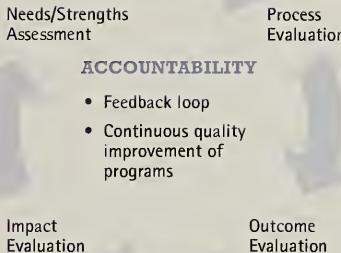
## SECTION II

# The HIV Prevention Evaluation Cycle

## OVERVIEW OF THE CYCLE

Evaluation is an ongoing and dynamic process. The cycle of HIV prevention evaluation in San Francisco is composed of five elements as depicted in Exhibit 2. (This visual framework is useful for understanding the evaluation process, but in reality the process is more complex and nuanced.) This cycle happens at multiple levels: (1) the individual level, where a person's individual needs are assessed and progress is measured, (2) the program level, where a particular program is evaluated, (3) the citywide programs level, where the collective effect of funded programs is assessed, and (4) the population level, where what is happening in the city as a whole is monitored.

### EXHIBIT 2 The HIV Prevention Evaluation Cycle in San Francisco



Each type of evaluation is linked to the next to form an ongoing cycle. For example, needs assessment generates information that is used to develop a program, and process evaluation assesses the extent to which a program is addressing the need. Process evaluation also reveals areas in which a program could be improved, and the improvement is implemented in order to enhance the chance that outcomes will be realized, and so forth.

The centerpiece of the process – accountability – reminds us why San Francisco prioritizes evaluation in the first place. It's not about accountability to funders, although that is certainly one use for evaluation data. It's about accountability to the San Francisco community. The HPPC, the HPS, and service providers owe it to the city and to the clients to do the best job we can to prevent new HIV infections, and evaluation is one important tool for keeping us accountable.

Accountability can be defined in several ways. Program monitoring is one form of accountability – an agency/program that enters into a contractual agreement to perform a service will be expected to perform according to agreed-on terms, within a specified time period, and with a stipulated use of resources and performance standards.

Accountability in the context of program evaluation has a broader definition. It means that the HPPC, agencies/programs, as well as the HPS, must be responsive to client and community needs, must make good faith efforts to implement services that lead to a reduction in new HIV infections, and must document the ways in which they do this. This means moving through the evaluation cycle and creating a continuous feedback loop so that findings can be used to improve programs (i.e., continuous quality improvement, or CQI).

# Steps 1-4

## Needs/Strengths Assessment, Process Evaluation, Outcome Evaluation, and Impact Evaluation

Exhibits 3-6 define the first four steps in the cycle, present the rationale for why each step is important, and highlight factors that need to be taken into account when implementing each step. The fifth step – accountability – is discussed after the exhibits. This is an overall picture of the evaluation cycle, and it is not expected that every program or the HPS will perform every step.

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### EXHIBIT 3    Needs/Strengths Assessment

<b>DEFINITION</b>	Needs/strengths assessment, commonly referred to as needs assessment, is the process of regularly and systematically collecting, assembling, analyzing, and making available information on the health of a community and the health systems and social structures affecting it, including strengths as well as deficits. This can include information and statistics on health status, community health needs, and epidemiologic and other studies of health problems. A needs assessment identifies both met and unmet needs, possible approaches to addressing unmet needs, and highlights community assets and strengths.*
<b>RATIONALE</b>	<p>Needs assessment:</p> <ul style="list-style-type: none"><li>• Is a critical tool for informing us about the problem at hand.</li><li>• Can identify multiple aspects of need, including need as clients and community members perceive it, as well as need from an epidemiologic perspective.</li><li>• Can help to quantify or shed more light on issues we already know exist. For example, it is well known that there is a lack of affordable housing in San Francisco and that homelessness can be a cofactor for HIV risk. Needs assessment could help illuminate the extent of the problem, who is most affected by lack of housing, barriers to solving the problem, and other details that we might not otherwise know.</li></ul>
<b>ADDITIONAL CONSIDERATIONS</b>	Assessment activities must extend beyond just those individuals already being reached with prevention messages and services. Needs assessment must include the broader community, not just HIV prevention participants. Specifically, it is important for improving our prevention efforts to understand which at-risk populations are not being reached and why.
<b>GUIDING QUESTIONS</b>	Needs assessments can help answer questions such as: <ul style="list-style-type: none"><li>• What is the epidemiology of HIV in San Francisco?</li><li>• What are the HIV prevention needs, both met and unmet, from the client and community perspective?</li><li>• What are the prevention needs of people living with HIV?</li><li>• What are community strengths and unmet needs regarding HIV status awareness?</li><li>• What behaviors are contributing to HIV risk?</li><li>• What drivers and cofactors are contributing to HIV risk?</li><li>• What are the barriers to accessing services?</li><li>• What are effective approaches for meeting the range of client and community needs?</li><li>• What are San Francisco's HIV prevention-related structural change needs (e.g., service integration and coordination) and how can they be addressed?</li></ul>

\*Adapted from Petersen DJ, Alexander GR: *Needs Assessment in Public Health: A Practical Guide for Students and Professionals*. Kluwer Academic/Pluwer Publishers, 2001.

## EXHIBIT 4 Process Evaluation

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<b>DEFINITION</b>	Process evaluation assesses the extent to which a program (or set of programs) was implemented as planned and identifies ways for improving program implementation. The goals of process evaluation are to: (1) ensure fidelity to the program plan, and (2) find ways to improve the program content and delivery so that it better meets client and community needs and can be more effective at achieving the specified program outcomes. In short, process evaluation answers the questions: who, how many, what, why, and how.
<b>RATIONALE</b>	<p>Process evaluation:</p> <ul style="list-style-type: none"><li>• Can help to eliminate unwanted deviation from the program plan, in order to maximize the likelihood of achieving the desired behavioral or other outcomes.</li><li>• Is a critical accountability tool. Data can demonstrate to funders that funds are being used as intended and that high-risk populations are being reached with appropriate interventions.</li></ul>
<b>ADDITIONAL CONSIDERATIONS</b>	Most agencies in San Francisco conduct their own process evaluation, as opposed to contracting with an outside evaluator. This approach is very practical from a logistical and financial perspective, and in many ways the "insider" perspective can be a benefit in terms of identifying the "how" and "why" behind the numbers. There are also benefits to having an outside evaluator who is neutral and does not have any preconceived notions about the program. Either approach can be valid, depending on the circumstances.
<b>GUIDING QUESTIONS</b>	<p>In order to get an accurate picture of who is being reached, certain process evaluation-related data, such as client demographics, must be collected on all clients (not just a sample).</p> <p>Process evaluation can help answer questions such as:</p> <ul style="list-style-type: none"><li>• How many people are being reached, with how many contacts per person?</li><li>• What are the demographics, cofactors, and behavioral risk populations of those being reached?</li><li>• Who is not being reached?</li><li>• Is there alignment between who the program was contracted to reach and who is actually reached?</li><li>• Is there alignment between the epidemiologic profile, the programs funded, and who is actually reached?</li><li>• Are programs being implemented as planned? If not, why not?</li><li>• Are programs working to: 1) reach high-risk (or other appropriate) populations, and 2) to recruit, engage, and retain clients? Why or why not?</li><li>• Are programs cost-efficient (i.e., productive relative to the cost) and cost-effective (i.e., cost per HIV infection averted is less than the lifetime cost of providing HIV/AIDS treatment and care)?</li></ul>

**DEFINITION**

Outcome evaluation answers the question: "What changed?" It looks at the impacts, benefits, and/or changes among clients/consumers or in the environment that happened during or after program implementation, and tries to establish whether the changes resulted from the program and/or other factors. Outcome evaluation can measure short-term, intermediate-term, or long-term changes.

**RATIONALE**

Outcome evaluation:

- Tells us whether a program or set of programs is actually working to change behaviors and other factors that lead to new HIV infections.
- Is what shows the world that HIV prevention is worth the investment, which is critically important in this era of dwindling funds for health and social services.

**ADDITIONAL CONSIDERATIONS**

Conducting outcome evaluation in a service environment is different than academic outcome research. Both are valuable and useful approaches to evaluation, each with their benefits and drawbacks. The HPPC supports an approach to outcome evaluation that maximizes scientific rigor without substantially increasing the burden (time, logistical, or financial) on programs and their clients.

Unlike process evaluation data, outcome data can be collected and analyzed using a sample of clients, if the sample is selected using appropriate criteria, or for a limited time period instead of ongoing.

**GUIDING QUESTIONS**

Outcome evaluation can help answer questions such as:

- In the immediate term: Are referrals and linkages made and followed up on successfully?
- In the intermediate term: Are the cofactors that affect HIV risk decreasing at the individual level?
- In the intermediate to long-term: Are HIV risk behaviors decreasing? Are sexual health-promoting behaviors increasing?

## EXHIBIT 6 Impact Evaluation

DEFINITION	Impact evaluation focuses on the broader, longer-term results of a program or set of programs. It reaches beyond immediate individual attitude and behavior change (outcome evaluation) to look at bigger picture changes, such as whether healthful behaviors are sustained over many years, or whether population-level trends in disease are affected.
RATIONALE	<p>Impact evaluation for HIV prevention:</p> <ul style="list-style-type: none"><li>• Speaks directly to San Francisco's overall goal: to reduce new HIV infections by 50% by 2015.</li><li>• Represents the ultimate marker of whether our efforts are pointed in the right direction.</li></ul>
ADDITIONAL CONSIDERATIONS	<p>Impact evaluation for HIV prevention has two significant limitations – (1) new HIV infections cannot be measured directly, and (2) it is difficult to link estimated reductions in new HIV infections to a particular program, set of programs, or specific strategies.</p> <p>To address the first limitation, San Francisco reviews a set of indicators. Indicators are conditions or diseases that are known to follow or precede the pattern of HIV transmission, such as sexually transmitted infections. A wide range of studies that examine prevalence, incidence, and cofactors are also reviewed periodically to paint a picture of the epidemiology of HIV. Finally, approximately every 5 years, San Francisco has engaged in a consensus process, in which all the available data is systematically reviewed, HIV incidence estimates are developed, researchers and community members review the estimates, and adjustments to the estimates are made as necessary. In 2008, San Francisco started to use a new methodology developed by the CDC for estimating HIV incidence.</p> <p>To address the second limitation, San Francisco must continue to emphasize and strengthen its process and outcome evaluation efforts. If these evaluations demonstrate that HIV prevention is working, impact evaluation shows a decrease in new infections, and the timing of the decrease coincides with the implementation of new or improved programs, then a stronger (but not conclusive) argument can be made that the reduction in new infections is a result of HIV prevention programs.</p>
GUIDING QUESTION	Are new HIV infections decreasing?

## Step 5

### Accountability: The Feedback Loop and Continuous Quality Improvement

San Francisco has always been a leader in HIV prevention evaluation and data collection. The HPPC, HIV prevention providers, and the HPS have united to prioritize evaluation because of its potential to provide information that will launch us to the next level – ending HIV.

In order to take that leap, a critical piece of the evaluation cycle must be in place and functioning effectively – accountability. Accountability goes beyond just showing that we did what we said we would do. It means taking what we've learned from evaluation, disseminating

it to the stakeholders that have the power to use it to create change (the feedback loop), and actually using it to make concrete improvements to programs and processes (continuous quality improvement, or CQI).

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## The Feedback Loop

The feedback loop operates both within agencies (e.g., between managers and line staff) and between and among institutions (e.g., between researchers and HIV prevention programs). The HPPC and the HPS are especially committed to ensuring that findings from evaluation and research are accessible to HIV prevention programs. A strong feedback loop also ensures overall coordination of services and programs and helps avoid duplication of efforts and reinventing the wheel.

## Continuous Quality Improvement

Continuous quality improvement (CQI) is an approach to quality management that emphasizes organizations and systems.<sup>1</sup> In the context of CQI, the term quality is defined as meeting and/or exceeding the needs and expectations of stakeholders – including clients, communities, staff, Boards of Directors, funders, etc. CQI is similar to quality assurance or QA, but it has a greater emphasis on ongoing improvement and collaboration. Specifically, CQI:

- Focuses on "process" rather than the individual;
- Recognizes both internal and external stakeholders;
- Promotes the need for objective data to analyze and improve processes;
- Relies on active participation of all involved, from front-line staff to directors of organizations;
- Is most effective when it becomes a natural part of the way everyday work is done; and
- Requires a commitment to explore, utilize, and reward new approaches in pursuit of ever-increasing quality.

The HPPC supports a CQI framework for HIV prevention in San Francisco that has three components (Exhibit 7):

- Citywide minimum standards that providers will be required to follow (e.g., required harm reduction elements in programs, staff training requirements). These standards should be developed collaboratively with providers.
- Provider CQI plans that reflect the minimum standards and also address issues specific to the agency or program. The HPS should provide training for HIV prevention providers on designing and implementing a CQI plan.
- Ongoing training and TA for providers designed to strengthen program capacity and effectiveness (e.g., training on science-based interventions, TA for improving linkage and referral processes).

### EXHIBIT 7 CQI Framework



1 Adapted from: <http://heapro.oxfordjournals.org/cgi/content/full/14/1/83> and <http://www.fpm.lastate.edu/worldclass/cqi.asp>.

## The Evaluation Cycle in Action: A Hypothetical Example

The fictional case study below is used to illustrate each type of evaluation, and how collaboration among different stakeholders can lead to the full use of the evaluation cycle. In the real world, the cycle is rarely as streamlined as this; thus, a real example of one step in the cycle – process evaluation – is presented in the next section to illustrate how evaluation, while incredibly useful, can also be very complex.

**Needs/Strengths Assessment.** HPPC members had been hearing a lot of anecdotal information from the community about the high rates of African American MSM testing HIV-positive. The HPPC voted to prioritize a needs assessment among this group to answer the following questions: (1) What is the HIV prevalence and incidence among African American MSM? (2) What cofactors and behaviors might explain the high incidence? (3) What are the supports and barriers that affect HIV testing rates among this group? and (4) What types of HIV prevention services would be of interest to this group? The needs assessment was conducted using both quantitative (surveys) and qualitative (focus groups) methods. Participants were recruited using a snowball sampling method, whereby each participant was asked to refer eligible partners, friends, or acquaintances. In addition, the HIV Epidemiology Unit provided the most current data on prevalence and incidence for this group. The results were presented back to the HPPC, with several recommendations about how to make HIV testing programs more accessible for African American MSM.

**Process Evaluation.** The HPPC adopted the recommendations from the needs assessment for improving HIV testing programs. The HPS also asked programs to collect data on gender, race/ethnicity, and behavior from all testers in order to conduct process evaluation. The HPS analyzed this data to determine if programs were meeting their goals in terms of numbers of African American MSM tested. HPS staff met with each agency on a quarterly basis to share and discuss the process evaluation data, and to identify program adjustments needed in order to stay on track to meet the goal. At the end of the year, the HPS presented the data on African American MSM testers back to the HPPC.

**Outcome Evaluation.** The HPPC also asked the HPS to evaluate two outcomes: (1) the rate of successful linkage to care among this group, and (2) any behavior change among testers three months after their HIV test counseling session. The HPS collaborated with providers and developed standards for linking people living with HIV to care and for tracking these linkages; three testing sites volunteered to conduct three-month follow up surveys with their testers. After one year, the HPS analyzed the data by comparing linkage to care rates for African American MSM versus other MSM. The HPS also assessed whether behavior changed by comparing the risk behaviors reported when people got tested to the risk behaviors they reported at three-month follow-up. Data was presented back to the providers and the HPPC.

**Impact Evaluation.** The HPS worked with the HIV Epidemiology Section to develop and track over time several indicators for African American MSM, including rates of unprotected anal sex, rates of methamphetamine use, and number of newly diagnosed HIV infections. After collecting and tracking these data for three years, the HIV Epidemiology Section Co-Director brought the data to the HPPC to illustrate the extent to which risk and new infections appeared to be changing among African American MSM.

**Accountability: The Feedback Loop and CQI.** The feedback loop and CQI were woven throughout the process, from the needs assessment to the impact evaluation phase. To support the feedback loop, findings were presented to the HPPC at each stage. CQI was implemented at both the process and outcome evaluation stages, where providers reviewed and discussed the data and made changes to improve their programs. Providers also assessed their adherence to the linkages standards on an ongoing basis, and identified ways to change their organizational systems and processes to make linkages happen more smoothly.

## Process Evaluation and Continuous Quality Improvement in Action: A Real Example

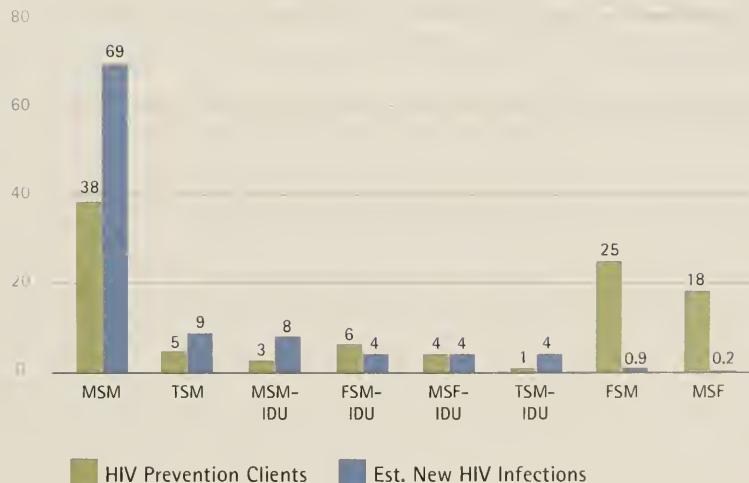
In 2007, San Francisco's Health Education and Risk Reduction (HERR) and Prevention With Positives (PWP) providers began a new system for collecting process data on all clients. This data is called Core Variables, and it consists of 16 pieces of data related to demographics, behavioral risk population, and services accessed. The Core Variables were designed to be a tool for process evaluation. The goal is to use the data to paint a citywide picture of who is being reached with what services, and to assess whether this picture is consistent with the priorities set by the HPPC.

In 2008, the data was analyzed and compared with the prioritized populations from the HPPC's 2004 HIV Prevention Plan. This information was presented to HIV prevention providers in June 2008 and to the HPPC in July 2008.

Core variables data has many limitations, including high rates of missing data for some variables, a tendency to over-count the number of unique clients, and the fact that this was the first year of data collection under a new system and therefore data quality assurance processes were not fully developed. In addition, core variables document the numbers of clients and contacts, whereas the HPPC sets priorities based on new infections and offers resource allocation recommendations. Finding a way to compare these different types of information was challenging and required making some assumptions.

Despite these limitations, the findings were striking. The data strongly suggested that, collectively, PWP providers were reaching populations as intended by the HPPC but HERR providers were not (Exhibit 8). In particular, it appeared that MSM were being reached at a lower rate than planned, and FSM and MSF were being reached at a higher rate. In the Exhibit, the green bar represents actual clients reached by BRP, and the blue bar represents estimated new HIV infections, on which the HPPC priorities were based.

### EXHIBIT 8 HERR HIV Prevention Clients Reached (4/1/07–3/31/08) Compared with Estimated New HIV Infections from the HPPC 2004 Priority Setting Model



The next step in the process evaluation was to try to understand why this was the case. Providers, HPPC, and the HPS all suggested many hypotheses. For example, it was suggested that perhaps the HPS did not fund providers in accordance with the HPPC priorities, and therefore the problem was with the funding process and not the programs. This hypothesis was explored and rejected as the main cause of the discrepancy; while the HPS did fund MSM at the lower end of the recommended range and FSM and MSF were slightly higher than recommended, this could not explain the stark contrast between the priorities and who was actually reached.

A number of other hypotheses were offered, including:

- Many MSF reached were actually having sex with men but not disclosing it, and thus the core variables data under-represents MSM clients.
- MSM clients were seen in more intensive interventions, more frequently, and over a longer period of time compared with FSM and MSF. Therefore, even though the actual number of MSM reached was lower than intended, the appropriate level of effort and resources were spent on this population because of the intensity of the service.
- Providers actually reached their contract goals with respect to the number of MSM reached, and the FSM and MSF participants were above and beyond the expectations.

All of these hypotheses and others were investigated, and while none could be completely proved or disproved, many had merit. Ultimately, the HPS decided to focus on where it could have influence – CQI, in the form of working with HERR providers who were not reaching the priority populations they were contracted to reach. Core variables data was re-analyzed for each funded HERR program and compared with contract goals. In 2008-2009, HPS staff met with providers whose core variables data showed they were not reaching the populations as outlined in their contracts. Together, HPS and program staff developed plans for improved targeting of programs. Progress will be measured by analyzing core variables data collected in 2009 and 2010.

## SECTION III

# Roles and Responsibilities

In order to tell all the chapters of San Francisco's HIV prevention story, all of the partners must contribute to the evaluation effort. The following sections outline the roles and responsibilities of the different stakeholders that, if fulfilled, will result in a rich and multidimensional picture of HIV prevention in San Francisco and creative ideas about strengthening our approaches.

### **HIV Prevention Providers**

The primary role of HIV prevention providers is to contribute to the goal of reducing new HIV infections by delivering prevention that is effective and meets community needs. With respect to evaluation, providers are responsible for documenting all aspects of their efforts to ensure accountability. The proposed evaluation requirements for HPS-funded providers, both existing and those recommended for implementation in the future, are summarized in Exhibit 9.

## EXHIBIT 9 Evaluation Requirements for HIV Prevention Providers

TYPE OF EVALUATION	REQUIREMENT	DESCRIPTION	Already in place	Prioritize for the future, if funding is available
PROCESS EVALUATION	Program plans	Complete and submit a program plan for each funded program. The program plan is a quantitative and qualitative description of who the program intends to reach.		X
PROCESS EVALUATION	Core variables (HERR and PWP programs only)	Collect and report on the core variables as outlined in the Core Variables Instruction Manual ( <a href="http://www.sfhiv.org/provider_eval_data_collection.php">http://www.sfhiv.org/provider_eval_data_collection.php</a> ).		X
	HIV testing variables	Collect data and maintain documentation in accordance with HPS policies ( <a href="http://sfhiv.org/testing_coordinator_resources.php">http://sfhiv.org/testing_coordinator_resources.php</a> ).		
PROCESS EVALUATION	Client satisfaction survey	Conduct a client satisfaction survey once annually and report data to the HPS. Providers may design their own client satisfaction instrument and process.		X
OUTCOME EVALUATION	Outcome objective	Conduct outcome evaluation of the program. This must include, at a minimum, the measurement of one quantitative outcome objective. All other aspects of the outcome evaluation (defining the objective, sampling, method and frequency of measurement, qualitative component) are optional, can be specific to the provider, and should be developed in collaboration with the HPS.		X
CQI	CQI plan	Develop and implement a CQI plan and processes that incorporate the citywide standards/requirements.	X (for HIV testing)	X (for HERR and PWP)
FEEDBACK LOOP	STOREE report	Write and submit to the HPS a brief annual summary of evaluation findings, including qualitative and quantitative data. What did you learn about the program or clients? How did you use that information to improve the program? Did the data collected reveal any new trends or issues that providers across the city should be aware of? What were the program successes? The failures? The challenges?		X
FEEDBACK LOOP	Trainings and meetings	Attend all required trainings and meetings related to evaluation and data. Examples of types of meetings include: <ul style="list-style-type: none"> <li>• Providers giving input into the evaluation requirements and overall plan;</li> <li>• Training on evaluation or data collection;</li> <li>• Sharing research findings, evaluation data, or best practices; and</li> <li>• Reflection and discussion about evaluation findings, and how prevention should evolve as a result.</li> </ul>		X
ALL	Participation in citywide evaluation projects	Providers are strongly encouraged to participate in projects as requested if the project is relevant to them, logically feasible, and would not create undue burden for staff or clients in terms of time or cost.		X
ALL	Evaluation plan	Develop and implement a program evaluation plan that incorporates (but is not necessarily limited to) the minimum HPS requirements described here. The plan should address staffing, activities and timeline, and evaluation tools to be used (such as surveys).		X

## HIV Prevention Section

Overall, the role of the HPS is to support HIV prevention by making information and resources accessible. The HPS does this in four main ways:

- **Collect, assemble, and analyze data.** The HPS assembles and analyzes data from providers, the literature, surveillance, and other sources. The HPS also initiates research studies on specific issues or populations as needed and as funding permits. The goal is to synthesize and summarize the data so that key stakeholders, such as the HPPC, providers, and the HPS can use it to (1) tell San Francisco's HIV prevention story, and (2) improve HIV prevention efforts.
- **Provide evaluation training, TA, and capacity building assistance (CBA).** Training is an event dedicated to transferring knowledge about a specific topic. TA is time-limited assistance provided to an agency in order to meet a specific, short-term goal. CBA may be short- or long-term, but it differs from TA in that its purpose is to increase an agency's ability to meet its longer-term goals through strengthening the organizational infrastructure. The HPS will ensure that providers have access to the training, TA, and CBA they need to meet the minimum evaluation requirements, as well as to implement additional evaluation strategies.
- **Facilitate the feedback loop and implement CQI.** The HPS is responsible for dissemination – implementing creative ways to frame and distribute evaluation and research findings – so that they can be applied to programs. The HPS is also responsible for facilitating the overall CQI process, such that prevention is continually improving. Impacted communities should always be included in the feedback loop process.
- **Encourage collaboration.** The HPS is responsible for identifying areas for collaboration among various stakeholders (e.g., researchers, providers, funders) and facilitating such collaboration, with the ultimate goal of opening channels for information exchange.

## HIV Prevention Planning Council

In general, the HPPC plays three main roles:

- **Set priorities based on data.** The HPPC will review the data assembled by the HPS and set priorities for HIV prevention based on the data. Priorities might relate to populations, interventions, strategies, or research.
- **Facilitate the feedback loop.** The HPPC will work closely with the HPS to ensure that the impacted communities, providers, and other stakeholders have access to the latest research and data. The HPPC does this primarily through the San Francisco HIV Prevention Plan, which is published approximately every five years and updated annually. Please see the Epidemiology chapter (pp. 10-57) for the latest data on HIV in San Francisco, the Community Assessment chapter (pp. 60-147) for the latest research on populations and cofactors/drivers, and the Strategies and Interventions chapter (pp. 170-279) for the most up-to-date information on evidence-based interventions.
- **Encourage collaboration.** The HPPC works closely with the HPS to encourage collaboration among various stakeholders (e.g., communities, researchers, providers, funders), with the ultimate goal of opening channels for information exchange.

## Researchers

The HPPC considers researchers to be our partners in HIV prevention and evaluation. In order to facilitate the use of research findings to improve HIV prevention, the HPPC offers the following guiding principles for research (first adopted by the HPPC in 2002; Exhibit 10) and requirements for researchers seeking letters of support from the HPPC (first adopted by the HPPC in 2000; Exhibit 11). All researchers conducting HIV prevention-related studies are strongly encouraged to share results with the larger San Francisco community. If a research study is providing a needed service, researchers are strongly encouraged to explore avenues for continuing the service after the study ends.

## EXHIBIT 10 Guiding Principles for Research\*

GUIDING PRINCIPLE	DESCRIPTION
COMMUNITY BENEFIT	Community-based research is research conducted by and for communities. Its purpose is to build community capacities that will provide knowledge with which to improve community conditions.
CAPACITY BUILDING	In its conduct, community-based research promotes and develops the inquiry skills of all participants. The aim of community-based research is to build sustainable capacities within communities for self-informed, self-inspired transformation.
COLLABORATION	A community's experience is a resource that belongs to the community. As such, research initiatives should invite community participation as early as possible in their formation, to shape cooperative agreements about ethical issues, the treatment of data, and the dissemination of findings.

\*From "Communities Creating Knowledge – A Consensus Statement on Community-based Research" from the International Network for Community-based Research on HIV/AIDS.

## EXHIBIT 11 Requirements for Researchers Seeking a Letter of Support from HPPC\*

REQUIREMENT*	DESCRIPTION
HOLD A COMMUNITY FORUM	Convene at least one community forum and at least one provider forum (they may be done jointly as one forum) that allow a diversity of viewpoints regarding the study and its results to be shared. The forum(s) shall be appropriately publicized and advertised.
PREPARE A WRITTEN REPORT FOR A COMMUNITY AUDIENCE	Disseminate a final written community report to all appropriate stakeholders (e.g., providers, SFDPH, community members, other researchers) and anyone requesting a report.
PRESENT RESULTS TO THE HPPC	Request to present results at an HPPC meeting.
MAKE RESULTS AVAILABLE ON THE INTERNET	Post results on the Internet and inform community members about the site.

\*It is recommended that all researchers conducting HIV prevention research with San Francisco populations follow these guidelines. Researchers receiving a letter of support from the HPPC are required to complete these tasks within six months of the conclusion of data analysis. If researchers who receive a letter of support from the HPPC do not fulfill the above requirements within this time frame, the HPPC will write a letter of concern stating such, indicating that the researchers' failure to fulfill the requirements will be considered should they request letters of support in the future.

## SECTION IV

# Achievements to Date and Future Objectives

The following section describes San Francisco's evaluation achievements to date as well as objectives and activities to be implemented in the next phase of Project STOREE (Exhibit 12). There are many unknown factors that could affect the rollout of this plan, such as changes in HIV prevention funding levels, changes in State or CDC requirements, or changes in HPPC priorities. Nevertheless, this plan is designed to be a roadmap for HIV prevention evaluation, with the goal of continuous improvement of San Francisco's prevention efforts.

## EXHIBIT 12 Evaluation Achievements to Date and Future Objectives

STEP IN THE EVALUATION CYCLE	ACHIEVEMENTS 2004-2008	CURRENT AND FUTURE OBJECTIVES
NEEDS ASSESSMENT	<ul style="list-style-type: none"> <li>• HPPC-prioritized needs assessments:           <ul style="list-style-type: none"> <li>• <i>People who test late for HIV</i></li> <li>• <i>Transmales</i></li> <li>• <i>Native Americans</i></li> </ul> </li> <li>• African American Action Plan</li> <li>• Latino Action Plan</li> <li>• Many programs conduct their own needs assessments and risk assessments (ongoing)</li> <li>• Community assessment and gap analysis (ongoing)</li> </ul>	<ul style="list-style-type: none"> <li>• By 2010, the HPPC will prioritize at least one community needs assessment for a population that is potentially high risk, but for whom there are few data.</li> </ul>
PROCESS EVALUATION	<ul style="list-style-type: none"> <li>• Implementation of core variables data collection requirement that will tell us who is being reached with what services</li> <li>• Implementation of new client-level data collection form for HIV counseling and testing</li> <li>• Implementation of PalmIT – the use of hand-held personal digital assistants to collect data</li> <li>• Program-based process evaluations, both one-time and ongoing</li> <li>• Qualitative evaluation of four HPS-funded HIV prevention programs</li> <li>• Assessment of the alignment between the HPPC priorities and who prevention is reaching citywide</li> </ul>	<ul style="list-style-type: none"> <li>• By 2009, the HPS will begin issuing quarterly reports on core variables and counseling and testing data.</li> <li>• By 2011, HPS-funded providers will begin to submit program plans.</li> <li>• Annually, the HPS and HPPC will compare core variables/ HIV testing data with the epidemiologic profile to answer the question: Is there alignment between the HPPC priorities and who prevention is reaching?</li> </ul>

**OUTCOME**

- Analysis of HIV testing data in terms of trends in partner counseling and referral services/disclosure assistance services and new HIV positivity rates
- Provider-based one-time evaluations focusing on behavioral outcomes of program participants (e.g., Latino MSM)
- Assessment of HIV prevention provider capacity and TA needs regarding outcome evaluation
- Publication of data from the HOPE Study (a study of an intervention for incarcerated individuals living with HIV prioritized by the HPPC)

**IMPACT**

- 2006 consensus estimates issued on HIV incidence, prevalence, and population size for BRPs
- New CDC methodology for estimating national HIV incidence used to estimate incidence in San Francisco

**CQI**

- CQI plans in place at all HIV testing providers

- By 2011, the HPS will lead an effort to develop citywide minimum quality standards for HPS-funded HIV prevention programs, with provider and HPPC input.
- By 2011, the HPS will provide a template and TA for programs/agencies to design their own CQI plans.

**FEEDBACK LOOP**

- Over 50 individuals from HPS-funded providers participated in one or more meetings to give input on HIV prevention evaluation and Project STOREE.
- A working group was formed to share best practices for Internet-based interventions.
- Project STOREE reports were published on the HPS website.

- Annually, the HPS and HPPC will host Project STOREE meetings to review service data and research as well as discuss and reflect on its implications for prevention. HPPC members, providers, researchers, and other stakeholders will be invited.

## SECTION V Conclusion

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The San Francisco HIV Prevention community – the HPPC, providers, the HPS, researchers, and those living with or at risk for HIV – has developed a common vision for HIV prevention evaluation. The vision is simple:

**Our vision is evaluation that is meaningful to San Francisco. To be meaningful, evaluation must effectively document our successes and help us improve our programs to better meet the needs of our affected communities and eliminate new HIV infections.**

This chapter sets out the steps needed to make this vision a reality. With continued collaboration among all the partners in this effort, this vision is more than achievable.

## How Project STOREE was Developed

### APPENDIX 1

The impetus for Project STOREE really began many years ago, in the mid-1990s, when the HPPC identified a need to have data on who prevention was reaching. But it was in 2004 that the HPPC, in its Strategic Plan, first articulated the concept of evaluation as a way to tell the story of HIV prevention. This Strategic Plan laid the groundwork for San Francisco to refocus its evaluation efforts on what was locally meaningful and relevant.

The HPS immediately began to implement some aspects of the HPPC Strategic Plan, and simultaneously, embarked on a process to gather wider input about what evaluation should look like in San Francisco. This process unfolded and continues to unfold in four phases:

- **Phase 1: Gather input from stakeholders.** The HPS Evaluation Coordinator held individual and group meetings with multiple local stakeholders – HPPC members, HPS and AIDS Office staff, providers, researchers, and others (see Appendix 5: Acknowledgments). Particular emphasis was placed on getting provider input, as providers are greatly affected by changes in evaluation and data collection. Two input meetings were held in June 2006, one with HERR and PWP providers and the other with CTL providers. In addition, existing information and research on evaluation was collected and assembled (e.g., documents on intervention standards, the HPPC's Strategic Evaluation Plan, literature on evaluation models).
- **Phase 2: Design a long-term plan for evaluation.** The HPS convened a Project STOREE working group to review all of the input gathered from stakeholders. The group was composed of HPS staff, provider representatives, and an HPPC member. The group met seven times over nine months to develop the plan that formed the basis for this chapter.
- **Phase 3: Get feedback and finalize plan.** The HPPC 2008 Strategies and Interventions and Evaluation Committee reviewed and gave input on drafts of the chapter.
- **Phase 4: Disseminate and implement plan.** The Project STOREE plan is being disseminated through multiple channels. In addition to being a chapter in the 2010 HIV Prevention Plan, Project STOREE is discussed with providers and other stakeholders in both formal meetings and during informal discussions.

# Evaluation Tips and Resources

## APPENDIX 2

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### Nine Simple Evaluation or CQI Activities Programs Can Do at No or Low Cost

- 1. Surf the net.** Spend 1 hour at [www.pubnet.gov](http://www.pubnet.gov) or on the Internet. Search for publications, press releases, presentations, and other informational items on your population. Learn what others are saying about this group's risk factors and effective interventions.
- 2. Reflect on your work.** Put a standing item on your staff meeting agenda called "Reflection." During this time, discuss what is working and what needs to change.
- 3. Get feedback from clients.** Have a "Comments and Suggestions" box at your front desk, or pass one around at the end of a group. Encourage clients to fill out cards and place them in the box. Review the answers during "Reflection" at your staff meeting.
- 4. Set goals and track them.** Come up with goals you want to achieve in a particular time period, such as how many groups staff will conduct, how many referrals they will make, or how many clients will be linked to HIV testing. Keep it simple. Put a large tracking sheet up on the wall that all staff can see and use. Every time a group is held or a client gets linked to testing, staff can put a tick mark on the sheet. Review progress toward goals in team meetings, and talk about what factors helped or hindered staff from meeting the goals.
- 5. Host a meeting with other organizations serving your population.** Get together and share knowledge – best practices, trends you are noticing, interventions that seem to be working, and ideas for collaboration. Take what you learned and use it to improve your program.
- 6. Tell a story with pictures.** Use a camera to document what you do, write the story behind the picture, and post the pictures on the wall. Use the stories to illustrate program successes or to serve as jumping off points for what you can do better. See <http://www.photovoice.com/> for a description of this methodology.
- 7. Do a mini chart review.** For clients for whom you keep charts, randomly select some charts (e.g., between 20 and 50 charts). Develop a simple scoring system that will indicate how much progress a client is making toward healthy behavior change (or maintaining healthy behaviors) based on case notes or other chart elements, such as a 0 for no change, a 1 for some change, and a 2 for a lot of change. Determine the average score and discuss with staff.
- 8. Request data on your population from the SFDPH HIV Section.** There is a wealth of data on HIV risk behaviors, prevalence, and incidence specific to San Francisco populations accessible by request. This data can help your program focus on the highest risk populations and subpopulations.
- 9. Debrief after counseling sessions or groups.** Have staff people spend 15 minutes to debrief after facilitating a group or meeting with a client. The debriefing could be done using a peer strategy or between supervisor and staff. What was one thing that worked well that could be used again? What was one challenge? What strategies were successful or not successful in handling the challenge?

# General Evaluation Toolkits, Manuals, and Other Resources

## APPENDIX 3

### AMERICAN PSYCHOLOGICAL ASSOCIATION

<http://www.apa.org/pi/aids/introprogrameval.html>

### THE CALIFORNIA ENDOWMENT

<http://www.calendow.org/article.aspx?id=1764&ItemID=1764>

### CDC NATIONAL PREVENTION INFORMATION NETWORK

<http://www.cdcnpin.org/scripts/dhap/selection.asp>

### NATIONAL MINORITY AIDS COUNCIL

<http://www.nmac.org/index/oes-english>

### SOCIOMETRICS

<http://www.socio.com/evalpubs.htm#howto>

### SYNERGY PROJECT

<http://www.synergyaids.com/apdime/index.htm>

### UCSF CENTER FOR AIDS PREVENTION STUDIES

<http://caps.ucsf.edu/pubs/manuals/>

### W.K. KELLOGG FOUNDATION

<http://www.wkkf.org/default.aspx?tabid=100&CID=278&CatID=278&NID=211&LanguageID=0&CID=281&ListID=28&ItemID=2813669&fld=PDFFile>

### W.K. KELLOGG FOUNDATION LOGIC MODEL DEVELOPMENT GUIDE

[http://www.wkkf.org/DesktopModules/WKF.00\\_DmaSupport/ViewDoc.aspx?LanguageID=0&CID=281&ListID=28&ItemID=2813669&fld=PDFFile](http://www.wkkf.org/DesktopModules/WKF.00_DmaSupport/ViewDoc.aspx?LanguageID=0&CID=281&ListID=28&ItemID=2813669&fld=PDFFile)

# Evaluation of Structural Interventions and Approaches

## APPENDIX 4

### ANNIE E. CASEY FOUNDATION

A Guide to Measuring Advocacy and Policy

<http://www.aecf.org/upload/PublicationFiles/DA3622H5000.pdf>

### CDC/ACADEMY FOR EDUCATIONAL DEVELOPMENT

Structural Interventions: HIV Prevention and Public Health: Descriptive summary of selected literature

<http://effectiveinterventions.org/download.cfm?DownloadFile=FA49EDB1-E04C-F06B-34673089680CF9B7>

The Project STOREE Working Group is acknowledged for the excellent work they did to develop the plan that formed the basis for this chapter:

Isela Gonzalez, SFDPH Forensic AIDS Project

Jennifer Hecht, STOP AIDS Project

Bhupendra Sheoran, Asian & Pacific Islander Wellness Center

Lori Thoennes, UCSF AIDS Health Project

Dara Geckeler, HIV Prevention Section

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Michael Paquette, HIV Prevention Section

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The following individuals and groups also gave input into the plan that formed the basis for this chapter:

Naomi Akers

Eileen Loughran

Kristen Clements

Derrick Mapp

Elizabeth Davis

Rani Marx

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Jenna Rapues

Teri Dowling

Israel Nieves-Rivera

Erik Dubon

Marise Rodriguez

Shelley Facente

Valerie Rose

Henry Fisher Raymond

Steven Tierney

Vincent Fuqua

Dan Wohlfeiler

Carolyn Hunt

San Francisco's HIV prevention providers

Ju Lei Kelly

HPPC 2004 Strategic Evaluation Committee



# 6

## References, Index & Acknowledgments



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**Developed by the**

**San Francisco HIV Prevention Planning Council,  
a community planning group funded by the  
Centers for Disease Control and Prevention  
in partnership with the San Francisco Department  
of Public Health HIV Prevention Section.**

**Prepared by**

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January 2010**

2010

**San Francisco HIV Prevention Plan**

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